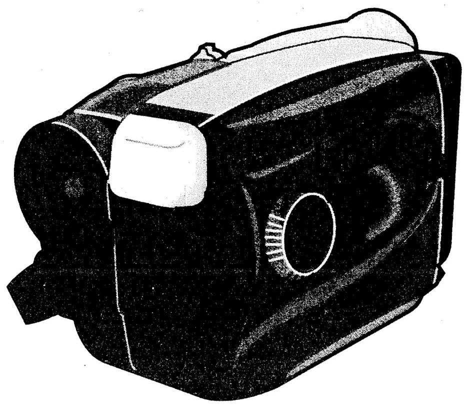
JVC

SERVICE MANUAL

COMPACT VHS CAMCORDER

GR-HF700EG/HF900EG



Compact VHS

VHS C
PAL

Hi-Fi
STEREO

SPECIFICATIONS

GENERAL

Format : VHS PAL standard
Power source : DC 6 V ⎓
Power consumption : GR-HF900: 6.8 W, GR-HF700: 6.4 W, Video light: 3 W
Signal system : PAL-type
Video recording system : Luminance: FM recording; Colour: Converted sub-carrier direct recording; Conforms to VHS standard
Hi-fi audio recording system : Deep-layer recording system conforming to stereo Hi-Fi VHS standard
No. of audio channels : 2 Hi-Fi audio channels, 1 normal audio channel
Cassette : VHS C cassette
Tape speed : 23.39 mm/sec
Recording time Max. : 45 minutes (with EC-45 cassette)
Operating temperature : 0°C to +40°C
Operating humidity : 35% to 80%
Storage temperature : −20°C to +50°C
Weight : GR-HF900: Approx. 790 g, GR-HF700: Approx. 810 g
Dimensions (incl. viewfinder) : GR-HF900: 112 (W) x 112 (H)x 209 (D)mm, GR-HF700: 112 (W) x 112 (H)x 220 (D)mm

CAMERA

Pick up : 1/4"-format CCD
Minimum required illumination : 3 lx (F1.6)
Illumination range : 3 to 100,000 lx
Lens : F1.6, f = 4.2 to 50.4 mm, 12:1 power zoom lens with auto iris and macro control, filter diameter 43 mm
Viewfinder : Electronic viewfinder with
- 0.55" colour LCD (GR-HF900)
- 0.5" black/white CRT (GR-HF700)

White balance adjustment : Auto/Manual adjustment

VIDEO

Output : 1 Vp-p, 75 ohms, unbalanced (via VIDEO out connector)

AUDIO

Output : −8 dBs, 1 k-ohm (via AUDIO out connector)
Microphone input : −68 dBs, high impedance, unbalanced with 3.5 ∅

AC POWER ADAPTER/BATTERY CHARGER (AA-V11EG) SPECIFICATIONS

Power requirement : AC 110 to 240 V∿, 50/60 Hz
Power consumption : 23 W
Output : DC 8.5 V ⎓, 1.3 A (CHARGE), DC 6.3 V ⎓, 1.8 A (VTR)
Charging system : Constant current, peak detection, timer controlled
Dimensions : 150 (W) x 42 (H) x 68 (D) mm
Weight : Approx. 350 g

CASSETTE ADAPTER (C-P7U) SPECIFICATIONS

Dimensions : 188 (W) x 25 (H) x 104 (D) mm
Weight : Approx. 240 g
Accessory : "R6 (AA)"-size battery x 1

For provided accessories, ☞ P. 3
For optional accessories, ☞ P. 36

E.&O.E.Design and specifications subject to change without notice.

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No. 86250
February 1995

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The following table lists the differing points between Models (GR-HF700EG and GR-HF900EG) in this series.

	GR-HF700EG	GR-HF900EG
VIEWFINDER	BLACK/WHITE	COLOR

Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

● Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded (▨) parts are critical for safety.
   Replace only with specified part numbers.
   Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
   Caution for continued protection against fire hazard.
   Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers
   4) Insulation sheets for transistors
   5) Barrier

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

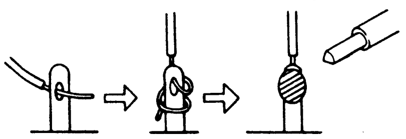


Fig. 1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10–15 kg of force in any direction will not loosen it.

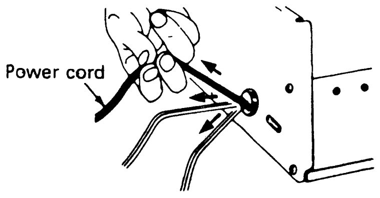


Fig. 2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector
    In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.
    1) **Connector part number** : E03830-001
    2) **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.
    3) **Replacement procedure**
       (1) Remove the old connector by cutting the wires at a point close to the connector.
       Important : Do not reuse a connector (discard it).

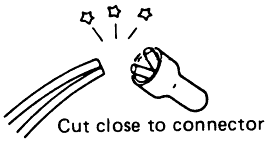


Fig. 3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

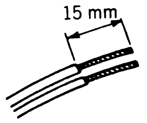


Fig. 4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

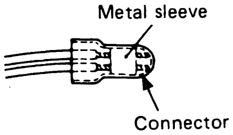


Fig. 5

(4) As shown in Fig. 6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

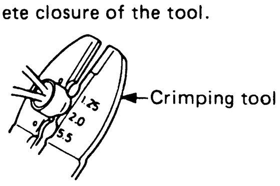


Fig. 6

(5) Check the four points noted in Fig. 7.

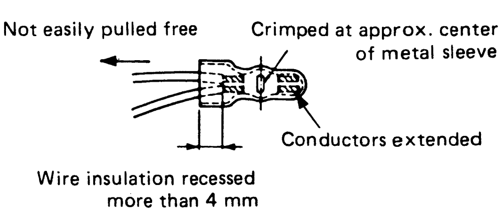

Not easily pulled free
Crimped at approx. center of metal sleeve
Conductors extended
Wire insulation recessed more than 4 mm

Fig. 7

●Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. **Insulation resistance test**
   Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. **Dielectric strength test**
   Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. **Clearance distance**
   When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

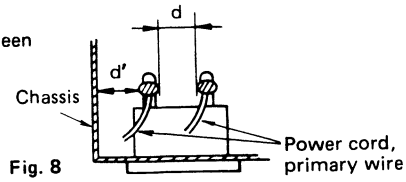


Fig. 8

4. **Leakage current test**
   Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).
   Measuring Method: (Power ON)
   Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

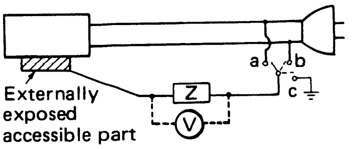


Fig. 9

5. **Grounding (Class I model only)**
   Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).
   Measuring Method:
   Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

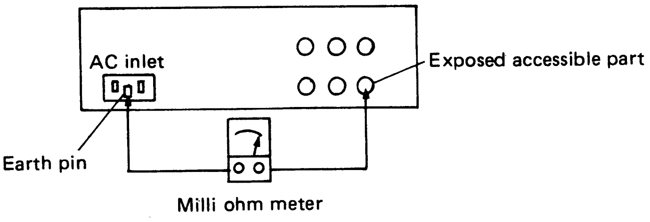


Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R ≧ 1 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V			AC 1.5 kV 1 minute	d, d' ≧ 4 mm
110 to 130 V	USA & Canada	–	AC 1 kV 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R ≧ 10 MΩ /500 V DC	AC 3 kV 1 minute (Class II) AC 1.5 kV 1 minute (Class I)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Table 1 Specifications for each region

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	0.15 μF 1.5 kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	2 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		50 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

INSTRUCTIONS

Thank you for purchasing the JVC Compact VHS camcorder. Learn about all the available features and take advantage of them for your total moviemaking enjoyment. Before using this camcorder, read this instruction booklet carefully so that you will obtain the best results from your camcorder.

SAFETY PRECAUTIONS

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

CAUTIONS:

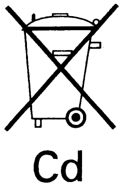
- To prevent shock, do not open the cabinet. No user serviceable parts inside. Refer servicing to qualified personnel.
- When you are not using the AC Power Adapter/Battery charger for a long period of time, it is recommended that you disconnect the power cord from AC outlet.

Warning on lithium battery

The battery used in this device may present a fire or chemical burn hazard if mistreated. Do not recharge, disassemble, heat above 100°C or incinerate.
Replace battery with CR2025; use of another battery may present a risk of fire or explosion.

- Dispose of used battery promptly.
- Keep away from children.
- Do not disassemble and do not dispose of in fire.

Crossed Out Dust Bin Mark



- The Crossed Out Dust Bin Mark on the battery pack indicates that the product complies with Directives 91/157/EEC and 93/86/EEC.
- Nickel-Cadmium (Ni-Cd) battery pack must be recycled or disposed of properly.

This camcorder is designed to be used with PAL-type colour television signals. It cannot be used for playback with a television of a different standard. However, live recording is possible anywhere. Use the BN-V12U/V22U/V25U/V60U battery packs and, to recharge them, the provided multi-voltage AC Power Adapter/Charger. (An appropriate conversion adapter may be necessary to accommodate different designs of AC outlets in different countries.)

NOTES:

- The rating plate (serial number plate) and safety caution are on the bottom and/or the back of the main unit.
- The rating plate (serial number plate) of the AC Power Adapter/Battery Charger is on its bottom.

You are recommended to carefully read the cautions on page 38 and 39 before use.

CE mark on the rating plate declares that the product complies with Directives 89/336/EEC and 93/68/EEC.

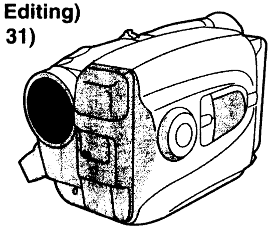
This unit is produced to comply with Standard IEC Publ. 65.

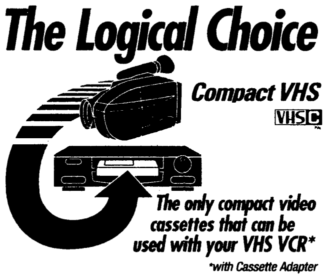
PAL

- Camcorder is designed exclusively for the VHS-C video cassette. Only cassettes marked VHS-C can be used with this unit.
- HQ VHS is compatible with existing VHS equipment.

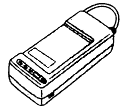
MAJOR FEATURES

■ Hi-Fi VHS Stereo Sound
■ Programme AE with Special Effects (☞ P. 16) ■ Intelligent Function Control (☞ P. 17 – 21) ■ 12x Variable-Speed Hyper Zoom (☞ P. 14)
■ Design-Integrated Auto Light (☞ P. 15) ■ EasyEdit (Random Assemble Editing) (☞ P. 29 – 31)

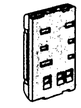



The Logical Choice
Compact VHS
VHS C
The only compact video cassettes that can be used with your VHS VCR*
*with Cassette Adapter

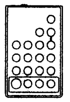
PROVIDED ACCESSORIES



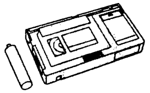
AC power Adapter/Charger
AA-V11EG (☞ P. 7, 8)



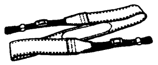
Battery pack
BN-V12U
(☞ P. 7, 8)



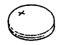
Remote control unit
RM-V704U
(☞ P. 6, 18, 23, 24, 29 – 33)



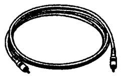
Cassette adapter
C-P7U (☞ P. 25)



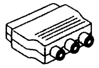
Shoulder strap
(☞ P. 36)



Lithium battery CR2025
(☞ P. 6, 10)



Editing cable
(☞ P. 31, 32)



Cable adapter
(☞ P. 28, 31, 32)

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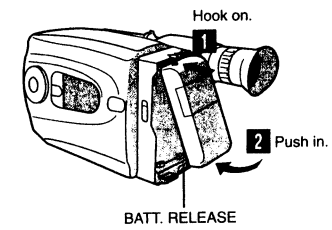
QUICK OPERATION GUIDE

SUPPLY POWER



Using the battery pack

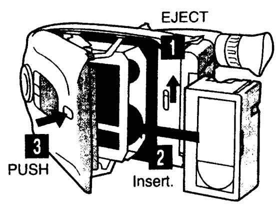
1 Hook-on the battery pack's top end to the camcorder. (Charging procedure, ☞ P. 8)

2 Push in the battery pack until it locks into place.

To remove the battery pack

Slide BATT. RELEASE and pull out the battery pack.

INSERTING A VIDEO CASSETTE



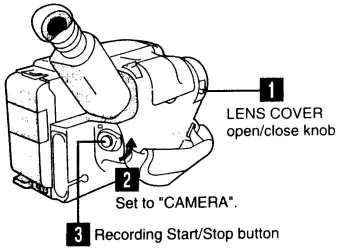
1 Slide EJECT.

2 Insert a video cassette.

3 Press PUSH.

(For more details, ☞ P. 11.)

SHOOTING



1 Slide the LENS COVER open/close knob to open the lens cover.

2 Set the power switch to "CAMERA".

—The power indicator will light and image will be seen in the viewfinder.

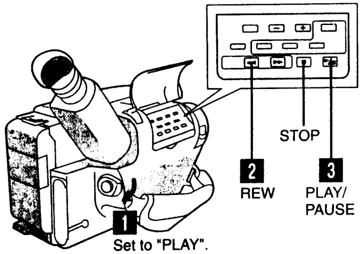
3 Press the Recording Start/Stop button.

— Recording starts.

- To stop recording temporarily, momentarily press the Recording Start/Stop button once again.

(For more details, ☞ P. 12)

PLAYBACK



1 Set the power switch to "PLAY".

2 Press REW.

—The tape will automatically stop at the beginning of the tape.

3 Press PLAY/PAUSE.

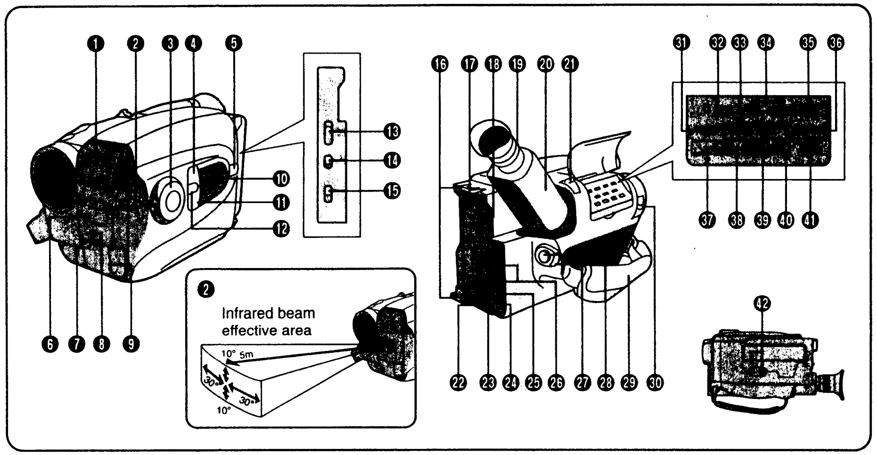
—Playback starts and playback picture appears in the viewfinder.

- To stop playback, press STOP.

(For more details, ☞ P. 26.)

- Or simply play back the tape on a VHS VCR using the Cassette Adapter. ☞ P. 25

CONTROLS AND CONNECTORS



No.		Page
①	Video light	15, 34
②	Infrared beam sensor window Receives the transmitted beam signal from the remote control unit. *The transmitted beam may not be effective or may cause misoperations when the infrared beam sensor window is directly exposed to sunlight or powerful lighting. • Be careful not to cover this area; built-in here is the sensor necessary for shooting.	
③	PROGRAM AE select dial	16
④	F1 (Function 1) button For Fader, Focus and Titles.	17, 18, 21
⑤	PUSH button	11
⑥	Tally lamp	12
⑦	External MIC jack (capped)	33
⑧	REMOTE jack (capped) For connection of the RM-V20U wired remote control unit (optional).	
⑨	Microphone	
⑩	LCD window	17
⑪	F2 (Function 2) button For Cinema, Exposure and Display.	17, 19, 20
⑫	Function SEL. (select) button	17
⑬	EJECT switch	11
⑭	AUTO PAUSE ON/OFF switch	13
⑮	LIGHT ON/AUTO/OFF select switch	15
⑯	Eyelets for shoulder strap	36
⑰	Clock battery compartment	10
⑱	Battery pack mount	7
⑲	Diopter adjustment	11
⑳	Electronic viewfinder	11, 35
㉑	Power zoom switch	14, 19
㉒	BATT. (battery) RELEASE switch	7

Connectors

The jacks ㉓ to ㉖ are located beneath the jack cover.

㉓	EDIT jack	31, 32
㉔	VIDEO out jack	28, 31, 32
㉕	RF DC OUT jack For connection of the RF-V5E RF unit (optional).	28
㉖	AUDIO out jack	28, 31, 32
㉗	POWER switch	12, 26
㉘	Recording Start/Stop button	12
㉙	Grip strap	11
㉚	LENS COVER open/close knob	12, 34

Operation buttons

The buttons ㉛ to ㊶ are located beneath the cover.

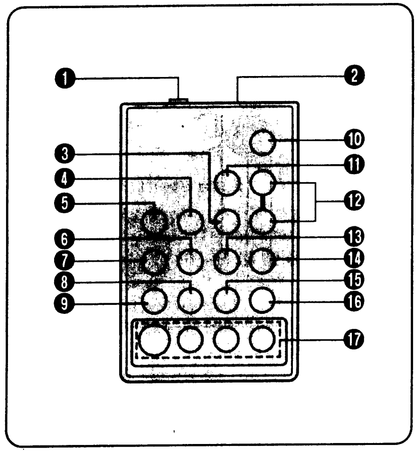
㉛	MWB (Manual White Balance)/AUDIO SEL. button	22, 27
㉜	TAPE 30·45 Tape length select/COUNTER R (reset)/ M (memory) button	11, 27
㉝	EDIT button	31, 32
㉞	DATE/TIME/CHAR. –/+ select/TRACKING buttons	10, 21, 26
㉟	DATE/TIME/CHAR. SET/IN/OUT button	10, 21, 30
㊱	R.A.EDIT button	30
㊲	REW/RETAKE R/⟲ (Quick Review) button	13, 26
㊳	FF/RETAKE F button	13, 26
㊴	CANCEL button	30
㊵	STOP button	26
㊶	PLAY/PAUSE button	26, 27

Bottom

㊷	Tripod mounting socket	36

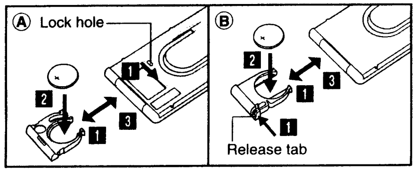
REMOTE CONTROL UNIT

The provided Full-Function Remote Control Unit can operate this camcorder from a distance as well as the basic operations (PLAY, STOP, PAUSE, FF, and REW) of your VCR. This remote control unit makes additional recording functions possible.



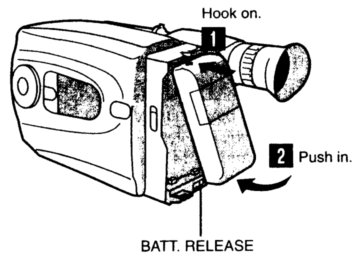
Inserting the battery

1 Pull out the battery holder according to the type of remote control unit you have.
Type Ⓐ: Pull out the battrery holder while sliding the lock hole.
Type Ⓑ: Pinch the release tab and pull out the battery holder.
2 Insert the lithium battery (CR2025), with its plus (+) side up, into the battery holder.
3 Replace the battery holder until it clicks in place.
*Read warning on lithium battery. (☞ P. 2)



Buttons	Functions	
	With the camcorder's power switch set to "CAMERA".	With the camcorder's power switch set to "PLAY".
❶ **PAUSE IN connector**	—	☞ P. 31
❷ **Infrared beam transmitting window**	Transmits the beam signal.	
❸ **MBR SET button**	—	☞ P. 29
❹ **INT. TIME button**	Self-Timer/Time lapse (☞ P. 23, 24)	—
❺ **REC TIME button**	Animation/Time lapse (☞ P. 24)	—
❻ **FF button**	Retake (Forward) (☞ P. 13)	FF/FF Shuttle Search (☞ P. 26, 27)
❼ **REW button**	Retake (Rewind) (☞ P. 13)	Rew/Rew Shuttle Search (☞ P. 26, 27)
❽ **PAUSE button**	—	Pause (☞ P. 27)
❾ **PLAY button**	—	Playback start (☞ P. 26)
❿ **START/STOP button**	Functions same as the Recording Start/Stop button of the camcorder.	
⓫ **VISS button**	Index code marking (☞ P. 14)	—
⓬ **ZOOM (T/W) buttons**	Zoom (invariable speed, ☞ P. 14)	—
⓭ **VCR CTL button**	—	☞ P. 29
⓮ **A. DUB button**	—	Audio dubbing (☞ P. 33)
⓯ **STOP button**	—	Stop (☞ P. 26)
⓰ **INSERT button**	—	Insert Editing (☞ P. 33)
⓱ **R. A. EDIT buttons**	—	☞ P. 30

PREPARATIONS

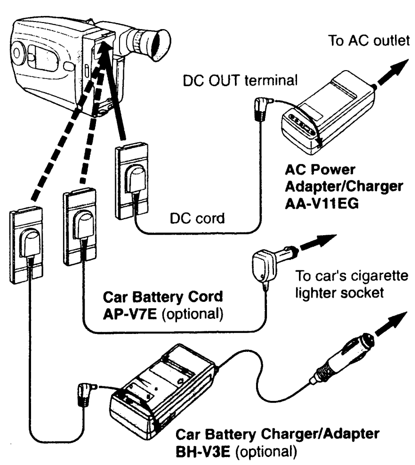


Approximate recording time

	GR-HF900	GR-HF700
BN-V12U	50 min. (30 min.)	55 min. (35 min.)
BN-V22U	105 min. (70 min.)	110 min. (80 min.)
BN-V25U	145 min. (100 min.)	155 min. (105 min.)
BN-V60U	105 min. (70 min.)	110 min. (80 min.)

( ): when the video light is on

- The recording time per charge is influenced by the duration of the recording standby, frequency of zooming, etc. It is safer to have spare battery packs.


To AC outlet
DC OUT terminal
AC Power Adapter/Charger AA-V11EG
DC cord
To car's cigarette lighter socket
Car Battery Cord AP-V7E (optional)
Car Battery Charger/Adapter BH-V3E (optional)

POWER SUPPLY SYSTEM

The convenient 3-way power supply system gives you a choice of the most appropriate power supply unit, depending on the application.

- No function is available without power supply.
- Do not use any power supply other than specified.
- Never attempt to use these power supply units with any equipment other than the camcorder.
- The provided AC Power Adapter/Charger features automatic voltage selection in the AC range from 110 V to 240 V.

WITH BATTERY PACK

The battery pack has been kept in the uncharged state for shipment. Therefore, before use, be sure to charge it. (☞ See next page.)

Attaching the battery pack

1 Hook-on the battery pack's top end to the camcorder. (Charging procedure, ☞ P. 8)
2 Push in the battery pack in until it locks into place.

To remove the battery pack

Slide BATT. RELEASE and pull out the battery pack.

WITH AC POWER

Use the AC Power Adapter/Charger.

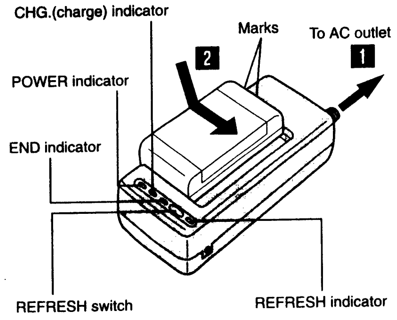
Note:
This unit can be used with 110 V to 240 V power supplies. Selection is automatic and no adjustment is required.

IN A CAR

Use the Car Battery Cord or Car Battery Charger.

- Leave the car's engine idling when using the car battery.
- The battery pack can also be recharged with the BH-V3E.
- Refer to the instruction booklet of the BH-V3E (for use with 12 V or 24 V negative grounded cars only) and the AP-V7E (for use with 12 V negative grounded cars only).

(Continued on next page.)



	Charging time	Discharging time
BN-V12U	approx. 70 min.	approx. 210 min.
BN-V22U	approx. 130 min.	approx. 420 min.
BN-V25U	approx. 160 min.	approx. 600 min.
BN-V60U	approx. 130 min.	approx. 420 min.

- The diagrams above indicate the approximate charging and discharging times of battery packs that are fully charged.
- Charging time and discharging time will vary depending on the ambient temperature and the status of the battery pack.

POWER SUPPLY SYSTEM (cont'd)

CHARGING/DISCHARGING THE BATTERY PACK

Charging the battery pack

1 Connect the AC power cord to a wall outlet.
— The power indicator lights.

2 Align marks and slide the battery pack in the direction of the arrow until it locks in place.
— The CHG. indicator lights.
— When charging has been completed, the END indicator will light.

3 Slide the battery pack in the opposite direction of the arrow.

Using the REFRESH feature

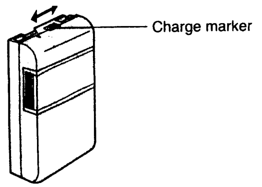
The REFRESH feature on the AC power adapter allows you to completely discharge the power from the battery pack before charging. After charging the battery pack several times, the actual battery operating time will gradually decrease. For this reason it is recommended to use the REFRESH feature only after every 5 charges.

1 Attach the battery pack to the adapter as illustrated above.

2 Push REFRESH.
— The REFRESH indicator will light and discharging will begin.
— After discharging is completed, the indicator will go off.

CHARGE MARKER OF THE PROVIDED BATTERY PACK

Located on top of the battery, this marker is convenient for reminding you of the battery's charge status. Decide for yourself which marker colours — red and black — will represent charged and discharged.



- **"Battery charged" — RED**
After charging (as soon as charging is completed), set this marker so that red appears.
- **"Battery discharged" — BLACK**
Upon detaching the discharged battery from the camcorder, set this marker so that black appears.

CAUTION

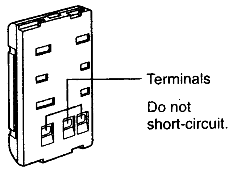
This marker does not move automatically. Make sure that the marker is properly set to accurately indicate the battery's charge status.

Notes:

- Do not repeatedly recharge a battery pack without fully discharging it. Its service life will decrease. Use the REFRESH feature after every 5 charges.
- Even if a battery pack is fully charged, but is not used, it naturally discharges gradually. Be sure to recharge the battery pack just before using it, or the day before you intend to use it.
- This unit is normally warm during operation. Operate it in places having good ventilation. Do not allow it to discharge in a container, such as a bag, etc. Blocking the ventilation causes the temperature inside the unit to rise, possibly resulting in a damaged unit.
- If either recharging or discharging is stopped in the middle of the process, remove the battery pack before unplugging the AC cord.
- This unit incorporates an over-discharging protection circuit; however, immediately remove the battery pack from this unit after discharging has been completed to maintain the battery pack's capacity.
- If used near a radio, the AC Power Adapter/Charger may interfere with reception.
- Be sure to unplug the DC cord before charging or discharging the battery pack.
- Before storing the battery pack for a long period it is recommended to discharge it.
- The REFRESH feature will not function if the power status of a battery pack is discharged (No power remaining).
- When the CHG.indicator is blinking, the battery pack has become hot. Wait for a while for the battery pack to cool.
- With a just-purchased battery pack, or with a battery pack that has been stored for a long period, the CHG. indicator may not light properly. In such a case, remove and reattach the battery pack again, then do the recharging procedure. The CHG. indicator should light during recharging to indicate, the battery pack is normal. If this is not the result, consult your nearest JVC dealer.

A WORD ON THE EXCLUSIVE BATTERY PACKS

The battery packs are nickel-cadmium batteries. Be sure to carefully read the following caution. When using an optional battery pack, please also read attached caution.

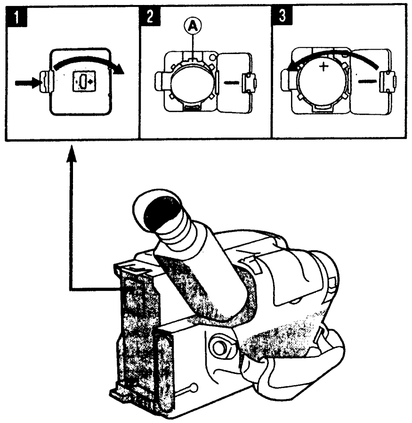


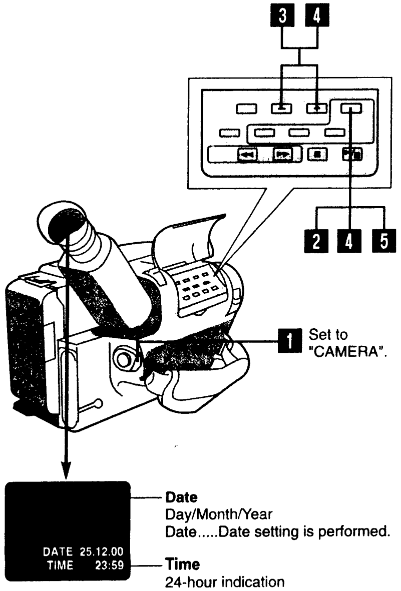
Temperature ranges:

The recharging time is based on room temperature of 20°C.
The lower the temperature, the longer the recharging time.

For charging:10°C to 35°C
For operating:0°C to 40°C
For storing:–10°C to 30°C

- **To avoid hazard:**
  - Do not burn.
  - Do not short-circuit the terminals.
  - Do not modify or disassemble.
  - Use only specified chargers.
- **To prevent damage and prolong service life:**
  - Avoid dropping, unnecessary shocks.
  - Avoid repeated charging without discharging.
- **This unit has a limited service life:**
Near the end of its service life, when it begins to deliver less recording time per charge, purchase a replacement.
- **It is normal for the unit to be warm after charging or use.**
- **This is a chemical reaction type battery; its properties are best maintained under the following conditions:**
  - Optimum charging takes place at temperatures between 10°C and 35°C. Cooler temperatures impede chemical reaction. Warmer temperatures can prevent complete charging.
  - Store in a cool dry place. Extended exposure to high temperatures will increase natural discharge and shorten service life.
  - Total natural discharge may occur during long storage periods. (Uncharged storage is preferable; recharge one day before use.)
  - Remove from charger or powered unit when not in use; some machines use current even when switched off.





Date
Day/Month/Year
Date.....Date setting is performed.

Time
24-hour indication
TIME....Time setting is performed.

CLOCK (LITHIUM) BATTERY INSERTION

Necessary for clock and date/time settings.

* Switch off the unit's power and remove the power supply unit before inserting or removing the clock battery.

1. Open the clock battery compartment cover while pressing the release tab.
2. Insert the provided lithium battery with the plus (+) side up and push it in.
   * When removing the battery, insert a pointed non-metallic object between the battery and the compartment (Ⓐ) to pull it out.
3. Close the compartment cover until it clicks in place.

Warning on lithium battery
- Dispose of used battery promptly.
- Keep away from children.
- Do not disassemble and do not dispose of it in fire.

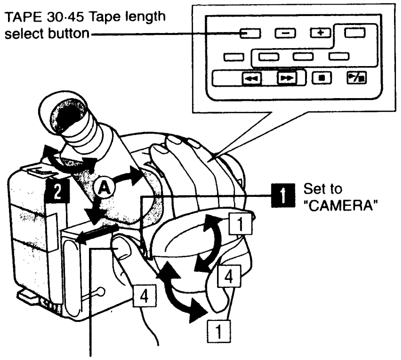
(See Warning on lithium battery, ☞ P. 2)

SETTING DATE/TIME

Before adjusting the date and time for the first time or after replacing the clock battery.

1. Set the power switch to "CAMERA".
2. Press SET. — The day blinks.
3. Press – or + to choose the correct day.
4. Repeat steps 2 and 3 to set the month, year, hour and minute.
5. Press SET to start the clock.
   — Now that the setting is completed, blinking stops. Both the date and time will be displayed for confirmation, after which the date remains displayed by itself.

Notes:
- While the date or time are blinking, the clock does not keep time.
- When re-adjusting the data, press SET and –/+ to correct them. After adjustment is completed, both the date and time appear for confirmation, then the display returns to the mode before correcting.
- When PROGRAM AE is set to "LOCK" (☞ P. 16), the date and time are displayed immediately after adjustments, after which the display automatically changes to Auto Date record mode.(☞ P. 20)

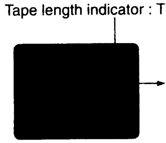


TAPE 30·45 Tape length select button

1 Set to "CAMERA"

Recording Start/Stop button

Tape length indicator : T30 or T45

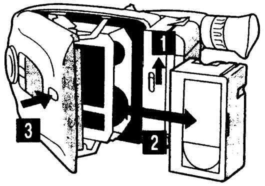


Viewfinder

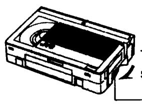
Tape remaining time indicator

45MIN → 44MIN -------→ 3MIN → 2MIN (Blinking) → 1MIN (Blinking) → 0MIN (Blinking)

*---MIN.....(Now calculating)



Notes:



Turn to take up slack.

Gear

- Ensure that tape is not slack inside the cassette, then load the cassette correctly.
- Do not repeat loading and unloading of the cassette without running the tape, as this will slacken the tape, causing tape damage.
- The cassette holder can be opened even when the power is off.
- Sliding EJECT may open the cassette holder a few seconds later. Do not open the cassette holder by force.

ADJUSTING THE GRIP

1. Separate the Velcro strip to expand the loop.
2. Pass your right hand through the loop and grasp the grip.
3. Adjust the length of the strap so that your thumb and fingers can easily manipulate the Recording Start/Stop button and power zoom switch.
4. Refasten the Velcro strip.

VIEWFINDER ADJUSTMENT

- **Positioning**
  The viewfinder can be positioned for best viewability (Ⓐ).
- **Diopter adjustment**
  The viewfinder lens can be adjusted to suit the operator's eyesight.

1. Set the power switch to "CAMERA".
2. Turn the diopter adjustment control until the indications in the viewfinder are clearly focused.

SET THE TAPE LENGTH

The tape remaining time is displayed in the viewfinder as shown. Before shooting, press the tape length select button according to the tape being used.

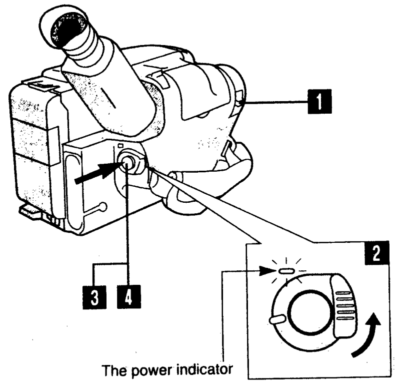
- **T30:** When using a tape with 30-minute recording time or less.
- **T45:** When using a tape with recording time more than 30 minutes.

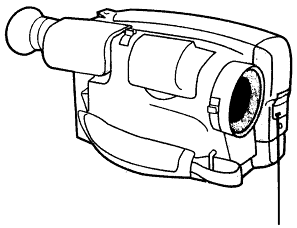
Notes:
- The indicated remaining time is approximate.
- The time required to calculate the remaining tape length and accuracy of the calculation may vary according to the type of tape used.
- TAPE END" appears when the tape reaches its end. "TAPE END" also appears when a cassette is loaded whose tape is already at its end.

LOADING AND UNLOADING A VIDEO CASSETTE

1. Slide EJECT. — The cassette holder opens.
2. Insert/remove the cassette with its label facing outward.
3. Press PUSH and make sure that the cassette holder is closed and locked.

RECORDING OPERATION





SHOOTING

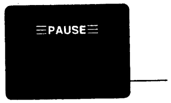
Preparations

- Supply power.(☞ P. 7.)
- Insert a video cassette correctly. (☞ P. 11.)
- Adjust the grip strap. (☞ P. 11.)

1. To enter the Record-Standby mode

1 Slide the LENS COVER open/close switch to open the lens cover.

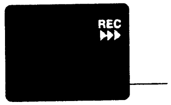
2 Set the power switch to "CAMERA".
— The power indicator lights and the camcorder enters the Record-Standby mode.
The aimed-at scene will appear on the viewfinder screen.



Record-Standby mode indication

2. To shoot the scene

3 Press the Recording Start/Stop button to start recording.
— The tally lamp lights while the recording is in progress.



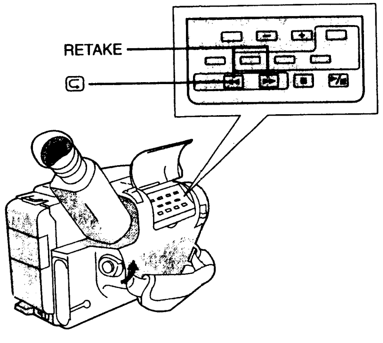
Recording mode indication

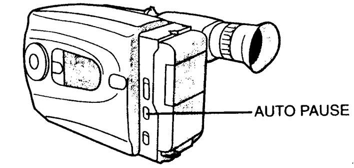
4 To stop recording temporarily. (To enter the Record-Standby mode)
Press the Recording Start/Stop button once again.

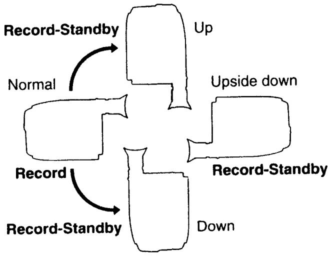
- To restart recording.
  Press the Recording Start/Stop button.
- Repeating steps **3** and **4** produces assemble recordings.

Notes and Advice

- For a longer pause, set the power switch to "POWER OFF" to save power.
- When a tape reaches its end during recording, "TAPE END" indicator will appear in the viewfinder and power itself off automatically if left for longer than 5 minutes.
- If the Record-Standby mode continues for longer than about 5 minutes, the unit switches itself off automatically. To restart recording, turn the power on and press the Recording Start/Stop button. This makes clean assembled recordings possible even after a long pause.
- When turning off the camcorder with the power switch set to "CAMERA", be sure to set the switch to "POWER OFF" first. Then set it back to "CAMERA" to turn on the camcorder again.
- When recording with a cassette that has been removed from the unit in the middle of use, first re-locate the end of the last recording (i.e. the point that you want to start recording from) by using the Retake function (☞ P. 13) after re-inserting the cassette. Otherwise, the end of the last recording may be erased.
- Lens cover warning blinks for approx. 5 seconds, whether the lens cover is open or closed, everytime the unit is turned on. It lets the user check to see if the cover is open. (☞ P. 35)







QUICK REVIEW

If you want to review the end of the last recording for confirmation, use this function.

- Press Ⓒ for less than 2 seconds from the Record-Standby mode.
  — The tape will be rewound for about 2 seconds of program time and played back automatically for this section, after which it will pause in the Record-Standby mode for the next shot.

RETAKE

While recording, you may decide to re-record certain segments. The Retake function is convenient for this.

1 Make sure the camcorder is in the Record-Standby mode. (If not, engage the mode.)

2 Press either RETAKE to reach the point where you wish a new recording to start.

- When RETAKE is released, the camera will enter the Record-Standby mode again.

3 Press the Recording Start/Stop button.
— Recording starts.

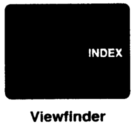
AUTO PAUSE SYSTEM

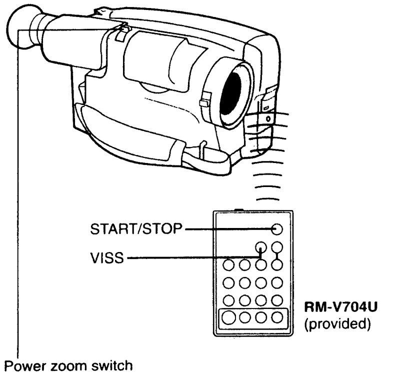
With the Auto Pause system, the camcorder automatically stops recording when it is pointed down. This function prevents shooting the ground, your feet, etc. by mistake.

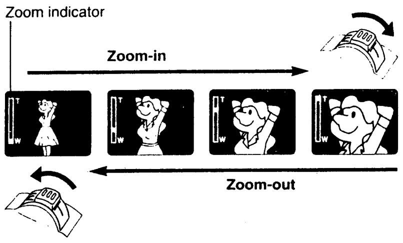
- Set AUTO PAUSE to "ON".
  — When the camcorder is tilted down by a large degree from its horizontal position during recording, it will automatically enter the Record-Standby mode, and the "AUTO PAUSE" indication will appear in the viewfinder.
  — Pressing the Recording Start/Stop button resumes recording.
- The Auto Pause system is also effective when the camcorder is pointed up or upside down.
- This system is also effective about a large degree twist to the left or right side from the horizontal position.
- To shoot in any of the above mentioned positions,set AUTO PAUSE to "OFF".

Notes and Advice

- Distortion might occur when playback starts in the Quick Review mode. This is normal.
- Noise may appear during Retake. This is normal.







INDEX CODE MARKING

The VHS Index Search System (VISS) gives you automatic access to any point you select on a recording. Only the marking aspect of the Index Search System is included in this unit. It allows index codes to be placed on recorded tape for convenient dubbing or editing on VCRs with an Index Search function.

Auto marking

An index code is always marked at the beginning of the first recording after the date advances and a cassette is inserted.

— "INDEX" blinks while marking.

Manual marking

The RM-V704U remote control unit allows index codes to be marked in any desired position.

1 Press VISS once to put an index code onto the tape.

— "INDEX" blinks during the marking process.

- If VISS has been pressed in the Record-Standby mode, an index code is put at the point where START/STOP is pressed.

ZOOMING

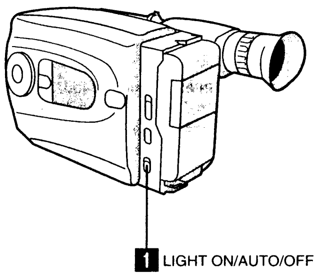
Pushing up/pulling down the power zoom switch ("T" and "W") will vary the focal length of the lens.

Procedure

- Pulling down to T : Zoom in on the image (bring it nearer).
- Pushing up to W : Zoom out.
- Zooming speed is variable. The further the switch is pulled down or pushed up, the faster the zoom speed becomes.

Notes and Advice

- Focusing may become unstable during the zooming-in operation. In this case, first zoom in in the Recording Standby mode then, after using the manual focusing or the Focus Lock function (☞ P. 18, 19) to hold the focus fixed, zoom in or out in the Record mode.
- When shooting low-contrast subjects in the Zoom-in mode, the camcorder automatically zooms out with the low contrast indicator (☞ P. 18) blinking and focus being performed.
- Auto marking also takes place when the date changes while shooting. In this case, the first recording after that does not mark an index code at its beginning.



LIGHTING — To apply more light to the scene

When natural lighting is too dim, you can brighten the scene by using the built-in video light.

1 Set the LIGHT ON/AUTO/OFF as required.

ON	: Always keeps the light on as long as the camcorder is turned on.
AUTO	: Automatically turns on the light when the camcorder senses insufficient lighting on the subject.
OFF	: Turns off the light.

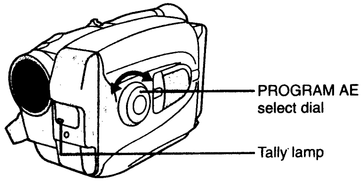
- The video light can be used with the camcorder's power on.
- It is recommended to set the white balance to indoor mode (☀) (☞ P. 22) when you use the video light.
- When not using the video light, turn it off to save battery power.

CAUTIONS:

- The video light becomes extremely hot. Do not touch it either while in operation or soon after turning it off, otherwise serious injury may result.
- Do not place the camcorder into the carrying case immediately after using the video light, since it remains extremely hot.
- When operating, keep a distance of about 30 cm between the video light and people or object.
- Do not use near flammable or explosive materials.

Notes and Advice

- Even if the battery indicator (▭) does not blink in the viewfinder, if the battery pack's charge is low, the camcorder may turn off automatically when you turn on the video light, or when you start recording with the video light turned on.
- When the LIGHT ON/AUTO/OFF is set to "AUTO":
  - Depending on the lighting condition, the video light may not be stably turned on or off. In this case, switch the light on and off manually.
  - While the Sports or High-Speed Shutter mode (☞ P. 16) is engaged, the light is likely to stay on.
  - While the Twilight mode (☞ P. 16) is engaged, the light will not activate.



PROGRAMME AE WITH SPECIAL EFFECTS

A variety of creative shooting effects are accessible with the PROGRAM AE select dial.

To engage any of the effects:

Turn the PROGRAM AE select dial so that the desired indication appears in the viewfinder.

— The chosen mode is activated approx. 1 second later.

Symbol on the PROGRAM AE select dial (Mode)	Viewfinder indication*	What it does/when to use
LOCK (Auto Mode Lock)	**A AUTO LOCK**	Setting to this mode locks the camcorder in the Full Auto mode, eliminating the possibility of misoperation by accidentally touching the following buttons while shooting. It is convenient when asking someone else to do the shooting. **These controls cannot be used in this mode:** CINEMA, FADER, FOCUS, EXPOSURE, DISPLAY, TITLES, MWB.
RELEASE (Auto Mode Release)	**M AUTO RELEASE**	Lets you use the controls that were inactive in the Auto Mode Lock mode.
● (Portrait Frame)	**● PORTRAIT FRAME**	The centre of the picture remains clear while towards the outer edges the screen is gradually rimmed in white. This mode is useful to emphasize the subject positioned in the centre of the screen.
(Spotlight)	**SPOT LIGHT**	The screen shades off to black towards the edges. for a visual effect that looks like the subject is being lit by a spotlight.
◪ (Sepia)	**◪ SEPIA**	The scene being shot will be recorded in sepia-tinted (reddish brown) monochrome, making it look like an old movie. By using it in combination with Cinema mode (☞ P. 17), you can recreate the authentic look of a classic Hollywood movie.
☾ (Twilight)	**☾ TWILIGHT**	Disengages the auto gain control and auto focus, and automatically locks the focus to infinity and white balance to ☀ (outdoor) mode. Dusk and twilight scenery, fireworks, etc. look more natural and dramatic. ■ Manual adjustment of white balance (☞ P. 22), and focus (☞ P. 19) is possible. ■ Re-engaging the auto focus mode is possible. (☞ P. 19)
(Sports)	**SPORTS**	Uses high shutter speed to clearly capture fast-moving action with less blur. Clarity is especially noticeable during slow motion playback on a video deck. Great for sports, races, etc.
1/2000 (High Speed (1/2000 sec.) Shutter)	**S 1/2000**	This mode sets the shutter speed to 1/2000 sec. to clearly capture fast-moving action with less blur. Clarity is especially noticeable during slow motion playback on a video deck. Great for sports (i.e.. golf swing), races, etc. This mode can capture faster action than the Sports mode can.
(15 sec. Self Timer)	**SELF TIMER**	This mode lets you delay the start of recording after the Recording Start/Stop button has been pressed. If the camcorder has been secured, the operator can enter the picture before actual recording begins. ■ When performing Self-Timer shooting, the tally lamp blinks, and its blinking speed becomes faster approx. 5 sec. before recording begins. Then when recording starts, the lamp lights normally to indicate recording is in progress.

* When the PROGRAM AE select dial is switched from one mode to another, the newly selected mode's name and its indication is displayed in the viewfinder for approx. 3 seconds. Then the name disappears, and only the indication remains.

Notes and Advice

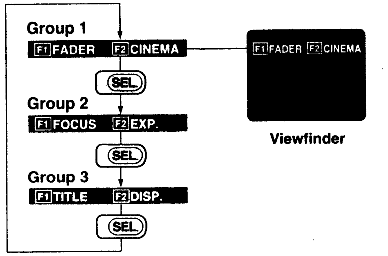
- Only one Special effect can be activated at a time.
- Picture colour may be adversely affected in the High-Speed Shutter or Sports mode when the subject is lit by alternating discharge-type light sources such as fluorescent or mercury-vapour lights.

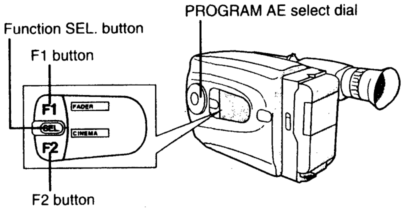
INTELLIGENT FUNCTION CONTROL

When using the following functions:
Fader, Cinema mode, Manual focus adjustment, Exposure control, Display mode, Instant Title

1. Set the PROGRAM AE select dial to any position except LOCK.
2. Press Function SEL. so that the required function's indication appears in the viewfinder.
3. Press either F1 or F2 button.
   - The function displayed on the right of F1: F1 button
   - The function displayed on the right of F2: F2 button

(For more details, ☞ P. 17 - 21)



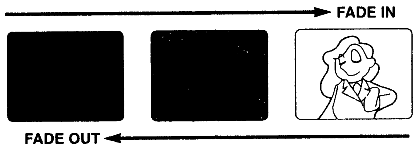


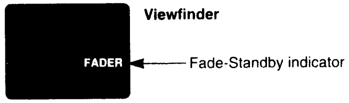
FADER

This camcorder incorporates a fader function which allows smooth video fade-in and fade-out to a black blank screen.

Fade-in functions when the recording starts, and fade-out functions when the recording stops (and the Record-Standby mode is engaged.)

1. Press Function SEL. until "FADER" appears beside "F1".
2. Press F1 button.
   — The Fade-Standby mode is engaged.
   — "FADER" appears in the viewfinder.
3. Press the Recording Start/Stop button.
   — Fade-in/out functions.



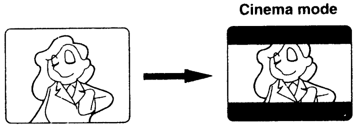


CINEMA MODE

This camcorder incorporates a "Cinema" mode recording function which allows you to record black bars at the top and bottom of the screen to produce a cinema-like "wide-screen" effect.

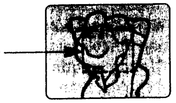
1. Press Function SEL. until "CINEMA" appears beside "F2".
2. Press F2 button.
   — The Cinema mode is engaged.

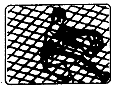
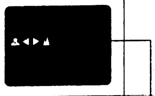
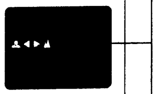
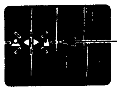
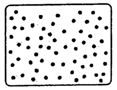
- To restore the normal screen:
  Press F2 button again while "CINEMA" is displayed beside F2 in the viewfinder.

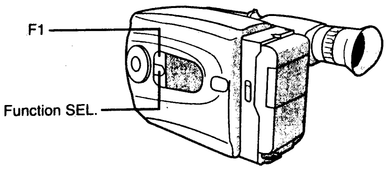


Notes and Advice

- Setting the PROGRAM AE select dial to "LOCK" causes the F1 F2 indicators in the viewfinder to vanish (the Intelligent Function Control becomes unavailable.) When the dial is switched to any other position, the Group 1 indicators (F1 FADER F2 CINEMA) are restored.
- With the Portrait Frame mode (☞ P. 16) engaged, the image fades in/out to a white screen.
- Using the Fader along with the Portrait Frame mode or Spotlight mode (☞ P. 16) adds a pro-style look to the picture.
- Keeping the Recording Start/Stop button pressed as long as required in the Fader mode allows the user to record a black blank screen.
- The screen will become slightly reddish when the Fader is used in the Sepia mode. (☞ P. 16)



	Two subjects at different distances overlap in the same scene.
	Low illumination.
	The subject has no contrast (differences in brightness and darkness), such as a flat, one-color wall, or a clear, blue sky, for instance.
	Low-contrast warning. A dark object is barely visible in the viewfinder.
	Minute patterns or identical patterns that are regularly repeated.



FOCUSING

Auto-focus

The camcorder's Full Range AF system can offer continuous shooting ability from close-up to infinity. The rectangular focus area detects focus. (No actual indication provided in the viewfinder.)

- Correct focus may not be obtained in these situations on the left. In such case manual focusing should be performed to obtain proper focus.

Focus lock

This camcorder's focus lock function is especially useful in the following situations:

- When things pass between your subject and the camcorder, make sure to engage the focus lock function, to lock your subject in focus before recording.
- If you want your main subject to appear in a corner of the screen, you should first centre it at the desired distance, then use the auto focus mode for focusing, engage the focus lock function, and move the camcorder till the subject is where you want it.

To lock the focus:

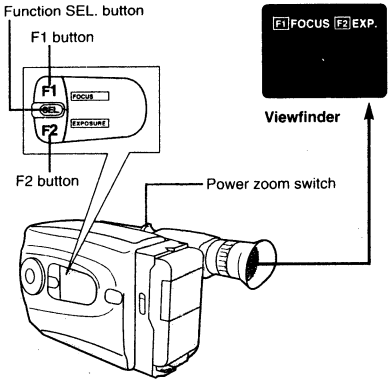
1. Press Function SEL. until "FOCUS" appears beside "F1".
2. Press F1.
   — The focus lock indication (◀▶) appears in the viewfinder.

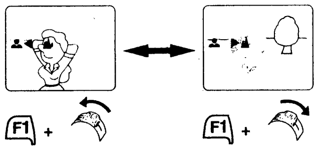
To release the focus lock mode
(To engage the Auto Focus mode):

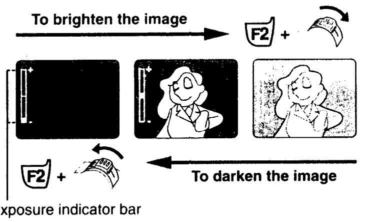
Press F1. At the moment when the button is released, the focus lock mode is canceled.
— FOCUS LOCK indication (◀▶) disappears.

Notes and Advice

- If the lens is smeared with stains or blurred with condensation, accurate focusing is not possible. Keep them clean. If they become dirty, wipe with a piece of soft cloth. When condensation occurs, dry them by wiping with a soft cloth or wait for conditions in which they become dry.
- The Focus Lock function is not available when PROGRAM AE is set to "LOCK". (☞ P. 16)







Exposure indicator bar

Manual focus

For manual focus operation, proceed as follows:

1. Press Function SEL. until "FOCUS" appears beside "F1".
2. Slide the power zoom switch (to "T" or "W") with F1 button pressed.
   - **To adjust the focus to a farther subject:**
     Slide to T. The Manual Focus indications (▲ ▶▲) appear, and ▶ blinks.
   - **To adjust the focus to a closer subject:**
     Slide to W. The Manual Focus indications (▲◀ ▲) appear, and ◀ blinks.
   - Two manual focusing speeds are available. For slow-speed, push/pull the switch slightly and hold that position. For fast-speed, push/pull the switch fully.
   - When the focus level cannot be adjusted any farther or closer, the indicator (▲) or the indicator (▲) will blink.
3. When finished with focus adjustment, release the power zoom switch.
   — The Focus indication (◀ or ▶)disappears, and the focus lock indication (◀▶) appears. The adjusted focus is locked in.

- **To release the Manual Focus mode** (to engage the Auto Focus mode):
  Press F1. At the moment when the button is released, the Manual Focus mode is canceled.
  — FOCUS LOCK indication (◀▶) disappears.

EXPOSURE CONTROL

This camcorder offers automatic adjustment of iris to provide the best available picture quality, but this can be overidden in cases when manual control of iris is desired.

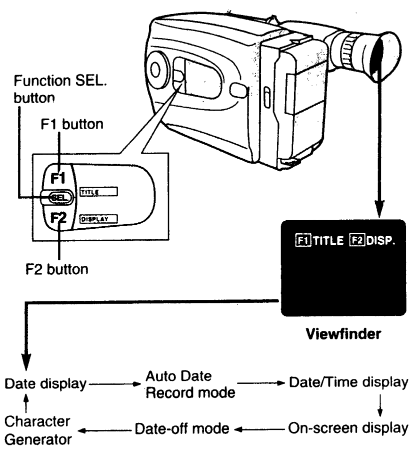
1. Press Function SEL. until "EXP." appears beside "F2".
2. Slide the power zoom switch ("T" or "W") with F2 button pressed.
   — The Exposure indicator bar appears in the viewfinder.
   - To brighten the image: Slide to T.
   - To darken the image: Slide to W.

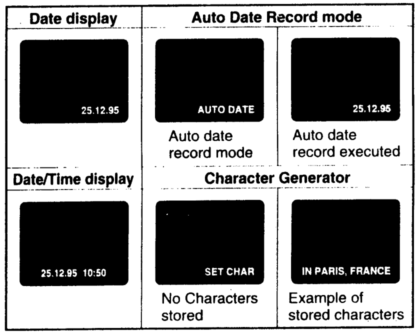
- To restore the initial standard setting:
  Press F2. At the moment when the button is released, the standard setting is restored.
  — The Exposure indicator bar disappears.

Notes and Advice

- When you use the Manual Focus mode, be sure to focus the lens in the maximum telephoto position. If you focus in on a certain subject in the wide-angle position, sharply-focused images cannot be obtained when zoomed up because the depth- of-field is reduced at longer focal lengths.
- When focusing manually, make neccessary viewfinder adjustments (☞ P. 11), then focus in.
- Manual Focus operation and Exposure control are not available when PROGRAM AE is set to "LOCK". (☞ P. 16)
- With the Group 2 functions (F1: FOCUS, F2: EXP.(osure), ☞ P. 17) selected, the power zoom switch is ineffective while F1 or F2 button is kept pressed.

ADVANCED VIDEOGRAPHY TECHNIQUES (Cont'd)


Function SEL. button
F1 button
F1
SEL
TITLE
F2
DISPLAY
F2 button
F1 TITLE F2 DISP.
Viewfinder
Date display
Auto Date Record mode
Date/Time display
On-screen display
Date-off mode
Character Generator


Date display
25.12.95
Auto Date Record mode
AUTO DATE
Auto date record mode
25.12.95
Auto date record executed
Date/Time display
25.12.95 10:50
Character Generator
SET CHAR
No Characters stored
IN PARIS, FRANCE
Example of stored characters

DATE/TIME CHARACTER INSERT

Select the display mode

The date/time/character can be displayed and recorded according to the selected mode.

1. Press Function SEL. until "DISP." appears beside "F2".
2. Press F2 while in the Record-Standby mode to cycle through the modes in the order shown on the left.

Recording the display

The selected display mode can be recorded.

- When no display is needed on the recorded tape, select Date-off mode before shooting.
- To delete the display during recording, press F2.
  - — If the display is to be called back on the screen, put the camcorder into the Record-Standby mode first. Then press F2 to select the desired mode.

Auto Date Record function

These functions allow the date (month, day and year) to be automatically recorded for about 5 seconds following the first operation of the Recording Start/Stop button:

= after changing the date,
= after a cassette is loaded, or
= after its mode is selected by F2.

- In the Auto Date Record mode, the viewfinder indication shows the date during the initial 5 seconds, then changes to "AUTO DATE".

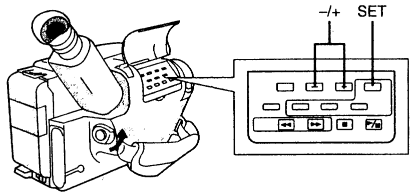
On-Screen Display Mode

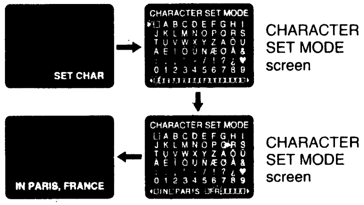
The viewfinder indications can also be displayed on the screen of a monitor connected to the camcorder.

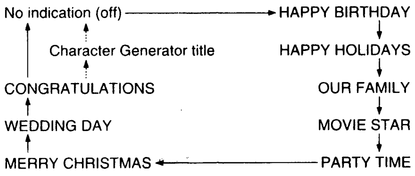
- Connect the camcorder to a video monitor. Press F2 until the viewfinder indications appear on the monitor screen.
- In the On-Screen Display mode, the date will be displayed and recorded.
- The on-screen display is not available during recording.

Notes and Advice

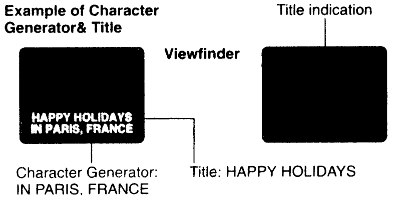
- The date/time/character display is available only after the date/time setting has been completed. (☞ P. 10)
- Setting PROGRAM AE to "LOCK" always engages the Auto Date record mode. (☞ P. 16) In this case, no other display modes are available.
- In Auto Date Record mode, the date indication is also recorded for approx. 5 seconds when the date changes while shooting. In this case, the first recording after that does not record the date indication at its beginning.




SET CHAR
CHARACTER SET MODE
CHARACTER SET MODE screen
IN PARIS, FRANCE
CHARACTER SET MODE
CHARACTER SET MODE screen


No indication (off)
HAPPY BIRTHDAY
Character Generator title
HAPPY HOLIDAYS
CONGRATULATIONS
OUR FAMILY
WEDDING DAY
MOVIE STAR
MERRY CHRISTMAS
PARTY TIME

Example of Character Generator& Title


Title indication
Viewfinder
HAPPY HOLIDAYS
IN PARIS, FRANCE
Character Generator: IN PARIS. FRANCE
Title: HAPPY HOLIDAYS

Character Generator

You can make your own title, store it in advance and superimpose it over the scene being shot.

How to store:

1. Press Function SEL. until "DISP." appears beside "F2".
2. Press F2 until "SET CHAR" or a title you have stored earlier appears in the viewfinder.
3. Press SET.
   — CHARACTER SET MODE screen will appear in the viewfinder.
4. Press –/+ to move the cursor, and then press SET to choose the desired characters.
5. Repeat step 4 to set all needed characters.
   — After all the desired characters have been entered, press SET as many times to exit the character set mode. The CHARACTER SET MODE screen will disappear, and the stored characters will be displayed.

INSTANT TITLES

The camcorder has eight pre-set Titles in memory. One of them can be superimposed above the Character Generator's stored title.

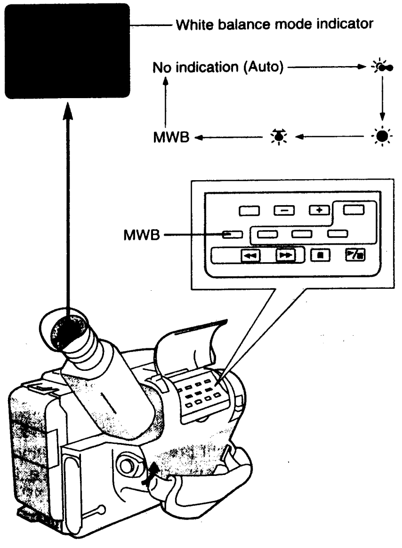
1. Press Function SEL. until "TITLE" appears beside "F1".
2. Press F1 while in the Record-Standby mode as many times as required until the desired Title is displayed. The Title changes in the sequence shown on the left.

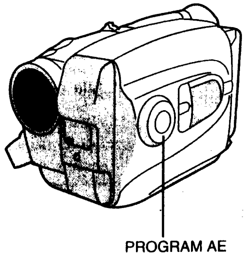
- To delete the Instant Title during recording, press F1.
  - — If the title is to be called back on the screen, put the camcorder into the Record-Standby mode first. Then press F1 to select the desired title.
- A personal title stored in the Character Generator can be displayed in the same position as the Instant Title.
  - — The Instant Title's function can be used along with the Character Generator mode; consequently, a pair of identical stored titles can be superimposed.

Notes and Advice

- Up to 18 characters can be stored.
- Only one personally input title created with the Character Generator can be stored at a time. To replace it with another title, proceed as above again.
- To create a space between two characters in your own title, choose "☐" on the CHARACTER SET MODE screen in the process of title storing.
- The Instant Title cannot be displayed when PROGRAM AE is set to "LOCK". (☞ P. 16)

ADVANCED VIDEOGRAPHY TECHNIQUES (Cont'd)





WHITE BALANCE ADJUSTMENT

This camcorder's Automatic Colour Temperature system senses the color temperature of the ambient lighting for automatic white balance adjustment. However, precise color temperature adjustment is not possible under the following conditions:

- The object is in various shades of the same colour.
- Predominantly red or brown object is being shot outdoors.

In these cases, use the camcorder's built-in preset filters for white balance adjustment.

To adjust the white balance:

Press MWB (Manual White Balance) so that the required indication appears in the viewfinder.

⛅ ....When you shoot in the daytime outdoors (cloudy day)

☀ ....When you shoot in the daytime outdoors (sunny day)

💡 ....When the source of illumination is a halogen or tungsten lamp.

MWB.........In the following situations.

How to use the MWB mode

In the MWB mode, the camcorder automatically adjusts the colour temperature of the subject's light source and keeps that colour temperature during shooting. When shooting some subjects with different colour temperatures, use the MWB mode to set a colour temperature and you can shoot with natural colours that are not affected by surroundings.

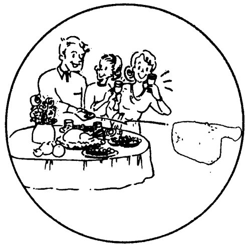
1. Press MWB until "MWB" appears in the viewfinder.
2. Point the camcorder at a white, flat object such as a sheet of white paper.
   Adjust focus manually. (☞ P. 19)
3. Keep MWB pressed for more than about 3 seconds.
   ❶ "MWB" blinks in the viewfinder..........During adjustment
   ❷ "MWB" is lit.................................Adjustment is finished
   —The camcorder is now ready for shooting.

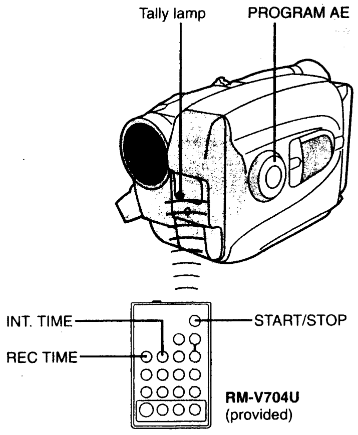
To switch to automatic adjustment:

Press MWB until the indication disappears, or turn the PROGRAM AE to "LOCK".

Notes and Advice

- Re-adjust the MWB mode in the following conditions:
  - When the lighting has changed.
  - When the camcorder has been turned off and on again.
  - When PROGRAM AE's position has been changed.
- Manual White Balance adjustment is not possible when PROGRAM AE is set to "LOCK". (☞ P. 16)
- It is helpful to connect your camcorder to a colour monitor when adjusting the white balance.



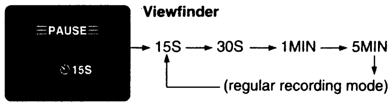


USING THE REMOTE CONTROL UNIT

Self-Timer

This Self-Timer function allows you to set the amount of time delay before recording starts after Start/Stop has been pressed. If the camcorder has been secured, the operator can enter the picture before actual recording begins.

1. Put the camcorder into the Record-Standby mode.
2. Press INT. TIME to select the interval time.
   —The following sequence of time setting is displayed with each press of INT. TIME:



3. Press START/STOP.
   - When the selected time has elapsed, recording begins automatically.
   - The tally lamp blinks, and its blinking speed becomes faster approx. 5 sec. before recording begins. Then when recording starts, the lamp lights normally to indicate recording is in progress.

To release the Self-Timer mode:

When the tally lamp is not blinking:
Press INT. TIME continuously until "⏲" goes off.
When the tally lamp is blinking:
Press Start/Stop to stop the blinking, then press INT. TIME continuously until "⏲" goes off.

(Continued on next page.)

Notes and Advice

- If the camcorder's PROGRAM AE is set to "⏲"(Self-Timer mode), the 15S mode will be selected. (☞ P. 16)

ADVANCED VIDEOGRAPHY TECHNIQUES (Cont'd)

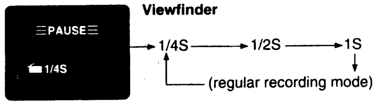
USING THE REMOTE CONTROL UNIT (Cont'd)

Animation

The Animation function produces the illusion of movement in otherwise stationary scenes or objects. This technique is accomplished by shooting a series of slightly different pictures of the same scene or slightly different poses of the same object for a brief period of time.

❶ Put the camcorder in the Record-Standby mode.
❷ Press REC TIME to select the recording time.
— The following sequence of time setting is displayed with each press of REC TIME:

Viewfinder



- If the camcorder's PROGRAM AE is set to "⏲" (Self-Timer mode), Animation will be cancelled and the camcorder will enter the Self-Timer 15S mode.

❸ Press START/STOP after focusing on the subject.
- Recording stops automatically in the Record-Standby mode after the selected period of time.

❹ Repeat steps ❷–❸ for the required number of pictures.
❺ Playback the recorded series to check if results were satisfactory.

To release the Animation mode:
Press REC TIME until "🎥" in the viewfinder disappears.

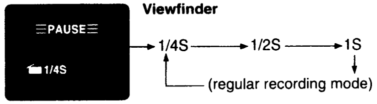
- The Animation mode can only be engaged from the Record-Standby mode.

Time-lapse

The Time-Lapse function allows automatic sequential on/off recording at preset time spans. With the camcorder continuously focused on a specific scene or object, the resulting recording will show subtle changes (such as shifts in cloud formations, plant growth etc.) over an extended period of time.

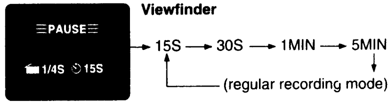
❶ Put the camcorder into the Record-Standby mode.
❷ Press REC TIME to select the recording time.
— The following sequence of time settings is displayed with each press of REC TIME:

Viewfinder



❸ Press INT. TIME to select the interval time.
— The following sequence of time settings is displayed with each press of INT. TIME:

Viewfinder



❹ Press START/STOP to start the Time-Lapse recording. The selected recording time and interval will alternate automatically.
- The tally lamp functions in the same way as in Self-Timer shooting.

To release the Time-Lapse mode:

When the tally lamp is not blinking:

Press INT. TIME and REC TIME continuously until "🎥" and "⏲" go off.

When the tally lamp is blinking:

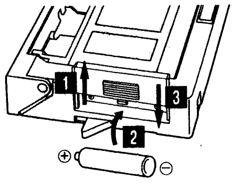
Press Start/Stop to stop the blinking, then press the INT. TIME and REC TIME continuously until "🎥" and "⏲" go off.

Notes and Advice

- Keep the camcorder steady in one position when filming the series of shots for best results. Mounting the camcorder on a tripod is recommended.
- Before recording in the Animation mode at the very beginning of a tape, set the camcorder to the Recording mode for about 5 seconds, so that the tape runs smoothly. Using the Fade-in function at this point is a good way to begin an animated programme.
- Fade-in/out is not possible during Animation or Time-Lapse shooting.
- During steps ❷ or ❸of the Time-Lapse, if the camcorder's PROGRAM AE is set to "⏲" (Self-Timer mode), the Self-Timer 15S mode will be engaged. (☞ P. 16)

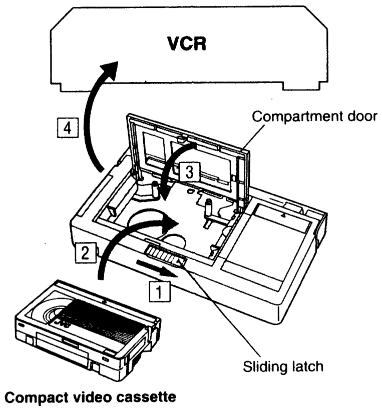
USING THE CASSETTE ADAPTER

By using the provided cassette adapter (C-P7U), a VHS video cassette recorded with this camcorder can be played back with any VHS video recorder. When the VHS-C video cassette is installed in the cassette adapter, it is fully compatible for both recording and playback on any VHS video recorder. The C-P7U cassette adapter is battery-powered and will automatically perform tape loading and unloading.



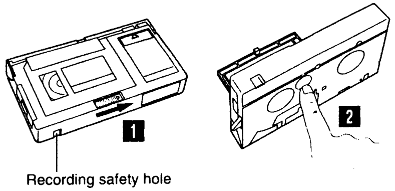
Inserting the battery into the cassette adapter

❶ Remove the battery cover by sliding it up.
❷ Install one "R6 (AA)" size battery as shown.
❸ Reattach the cover.



Playback on the VCR

1. Open the compartment door by sliding the latch.
2. Insert the compact video cassette.
3. Close the compartment door. The tape is loaded.
4. Insert the cassette adapter into the VCR.
5. Playback the tape.

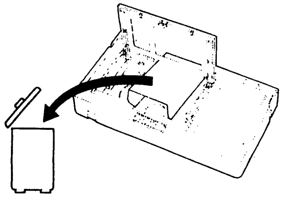


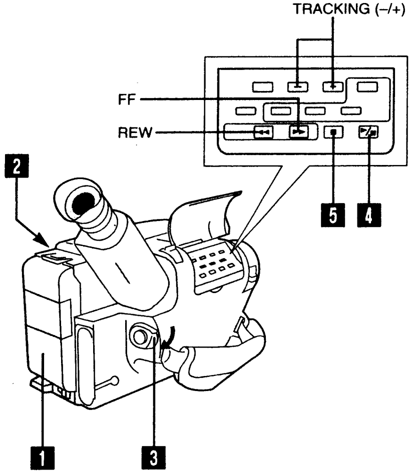
Removing the compact video cassette

❶ Slide the sliding latch.
— The tape will be unloaded and the compartment door will open.
❷ Insert your finger into the hole on the underside of the adapter, push the cassette up from below and remove it.

Notes and Advice

- Only compact video cassette tapes marked VHS-C can be used with the cassette adapter.
- During special-effect playback (slow motion, still frame, etc.), the picture may vibrate or noise bars may appear on the screen.
- When using the cassette adapter with a compact video cassette installed to record on a VCR, cover the recording safety hole using adhesive tape.
- Please remove paper before using the C-P7U.





The camcorder permits playback of recorded "VHS-C" video cassettes.
For connections refer to page 28.

PLAYBACK OPERATION

1. Preparations

1. Supply power. (Battery or AC operation: ☞ P. 7)
2. Insert a pre-recorded VHS-C cassette.
   - Ensure that tape is not slack inside the cassette, then load the cassette correctly. ☞ P. 11.

2. To playback a cassette

3. Set the power switch to "PLAY".
   — The power indicator lights.
4. Press PLAY/PAUSE.
   — Playback starts and playback picture appears on the viewfinder screen and connected TV.

3. To stop playback

5. Press STOP.

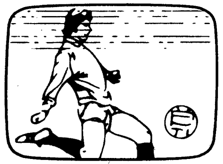
REWIND OR FAST-FORWARD THE TAPE

To rewind the tape:
When in the stop mode, press REW.
To fast-forward the tape:
When in the stop mode, press FF.

MANUAL TRACKING

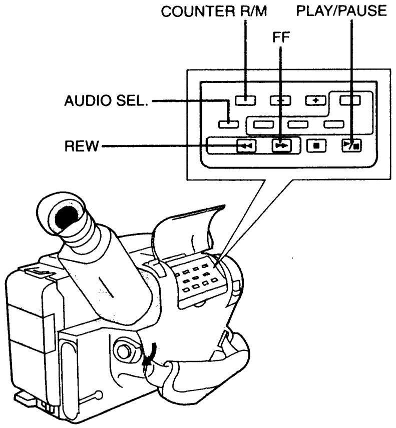
If noise bars appear on the screen, the tracking needs to be adjusted.

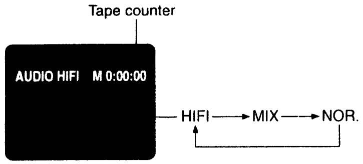
1. Press either TRACKING as many times to adjust to the best picture possible.
   - To reset the tracking back to its standard preset, press both TRACKING (–/+) simultaneously.



Notes and Advice

- After about 5 minutes in Stop mode, the camcorder switches itself off automatically. (To turn on the camcorder again, set the power switch to "POWER OFF" first and then back to "PLAY".)
- The tracking adjustment may not be effective on tapes recorded on another VCR's or camcorders.





Viewfinder

STILL PLAYBACK

Press PLAY/PAUSE during playback.

- To resume normal playback, press PLAY/PAUSE again.

SHUTTLE SEARCH

Fast-speed forward playback:
Press FF during playback.
— Playback speed of the tape will be 3 times the normal speed.

Fast-speed reverse playback:
Press REW during playback.
— Reverse playback speed of the tape will be 3 times the normal speed.

COUNTER MEMORY FUNCTION

This camcorder incorporates a counter memory function which facilitates locating a specific tape segment.

1. Press COUNTER R/M for more than 2 seconds.
   — Resets the counter to "0:00:00".
2. Press COUNTER R/M for less than 1 second.
   — "M" appears.
3. After recording or playback, press STOP, then REW.
   — The tape will automatically stop at the counter reading of around "0:00:00".
4. Press PLAY/PAUSE. — Playback starts.

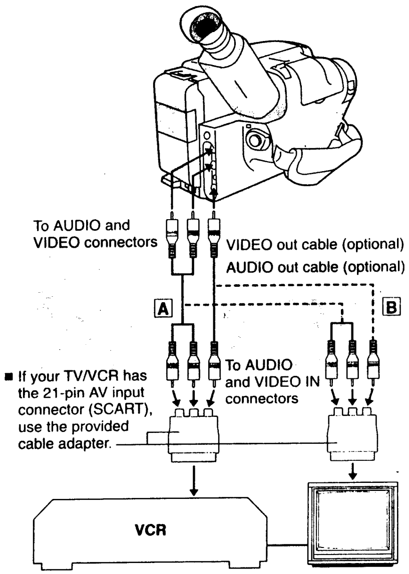
CHOOSING THE AUDIO SOUNDTRACK

Press AUDIO SEL. so that the required indication appears in the viewfinder.

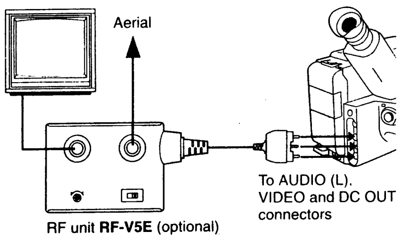
- HIFI : To listen to the sound recorded on the Hi-Fi audio track.
- MIX : To listen to the sound recorded on both Hi-Fi and longitudinal audio tracks (mixed audio).
- NOR. : To listen to the sound recorded on the longitudinal (normal) audio track.

Notes and Advice

- For brief fast-speed searching, hold FF or REW for more than 2 seconds. When the button is released, the search ends and the tape will play.
- Noise bars will appear and pictures may become monochrome while in Still Playback or Shuttle Search. This is not due to any defect of the unit.
- To protect the tape and to conserve power, the camcorder will enter the stop mode and turn itself off after 5 minutes of still playback.
- The counter memory functions in the Fast-Forward and Rewind modes.
- To cancel the memory function, press COUNTER R/M so that the "M" disappears.



- If your TV/VCR has the 21-pin AV input connector (SCART), use the provided cable adapter.



RF unit **RF-V5E** (optional)

Also refer to the instruction manual for your VCR or TV when connecting the camcorder to them.

Connection to a VCR A

In this situation, use the AUDIO and VIDEO output cables (optional).

1. Connect the camcorder and the VCR as shown in the diagram on the left.
2. Turn on the camcorder, the VCR and TV.
3. Set the VCR to AUX (iliary) input mode, and the TV to the VIDEO mode.

Connection to a television equipped with A/V input connector B

In this situation, use the AUDIO and VIDEO output cables (optional).

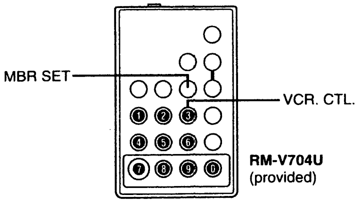
- Connect the AUDIO and VIDEO connectors of the camcorder to the A/V input connector of the television.
- Use the Video (or AV) mode specified in the TV's instruction manual.

Connection to a television not equipped with A/V input connector

In this situation, use the RF unit RF-V5E (optional). For connection and operation, please refer to the instruction manual for the RF-V5E.

Notes and Advice

- Press AUDIO SEL. to select the required audio soundtrack. (☞ P. 27)
- It is recommended to use the AC Power Adapter/Charger as the power supply rather than the battery pack.
- It is possible to monitor the picture and sound from the camcorder even when a cassette tape is not loaded. Set the power switch to "CAMERA". When you select the television input from your camcorder, the audio and video can be monitored.
- The camcorder has a wide dynamic range in the Hi-Fi audio mode. It is recommended that you check the maximum level if you are going to listen to the Hi-Fi audio signals through a stereo amplifier. A sudden surge in speaker input may cause speaker damage.
- Some speakers and televisions are specially shielded to prevent television interference. If neither is shielded, do not place the speakers adjacent to the television, otherwise the video playback picture will have interference.



RM-V704U
(provided)

VCR CODE LIST

VCR BRAND NAME	BUTTONS (A) (B)
AKAI	❻ ❷
	❻ ❹
	❼ ❼
BLAUPUNKT	❶ ❸
FERGUSON	❾ ❼
	❾ ❽
	❸ ❷
GRUNDIG	❶ ❹
	❸ ❹
HITACHI	❻ ❻
	❻ ❸
JVC A	❾ ❶
B	❾ ❻
C	❾ ❸
MITSUBISHI	❻ ❼
	❻ ❽
NEC	❸ ❼
	❸ ❽
PANASONIC	❶ ❸
	❶ ❼
	❶ ❶
	❾ ❹
	❶ ❽
PHILIPS	❶ ❾
	❾ ❺
	❶ ❶
	❾ ❹
	❾ ❶
	❾ ❻
	❶ ❷
	❸ ❸
SANYO	❸ ❻
	❸ ❺
SELECO, REX	❾ ❶
	❾ ❻
SHARP	❶ ❺
	❶ ⓿
SONY	❻ ❺
	❻ ⓿
	❸ ❾
	❸ ❶
THOMSON, TELEFUNKEN, SABA, NORDMENDE	❾ ❶
	❾ ❻
	❾ ❼
	❸ ❷
TOSHIBA	❻ ❾
	❻ ❶

RANDOM ASSEMBLE EDITING (R.A.Edit)

This function makes it easier to create edited videos when your camcorder is used as the source player in combination with your VCR. You can pre-select up to 8 scenes or "cuts" for automatic editing in the sequence you have specified. Random Assemble Editing can be more conveniently done if the RM-V704U MBR (Multi Brand Remote, provided) has been set to correspond to the brand of your VCR.

[1] How to set the remote control unit to correspond to the brand of your VCR:

Turn the VCR's power off before starting.

1. Point the remote control toward the VCR's infrared beam sensor window.
2. Refer to the list on the left, and while pressing MBR SET, press button (A), then press button (B).
3. Release MBR SET.
   - The code is set and the VCR's power automatically comes on.
     If your VCR has more than one code, choose the code with which you can turn the VCR's power on.
     (With some VCR brands, power won't come on automatically. In this case, turn the VCR power on manually and check to see if the remote control buttons work with the VCR.)

[2] How to operate the VCR:

1. Turn the VCR's power ON.
2. Press the button on the remote control unit corresponding to the function you want to operate while pressing VCR CTL.

(Continued on next page.)

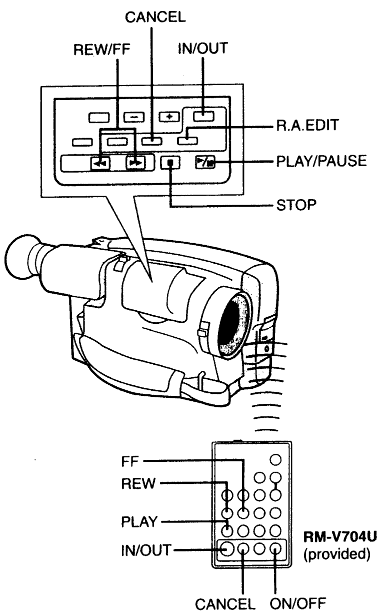
Notes and Advice

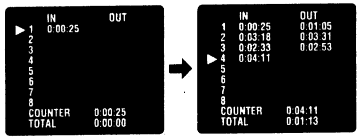
- Since the remote control unit has a number of operation codes, determine the appropriate code for operating your VCR by confirming correct VCR operations according to the steps above.
- The VCR functions that the RM-V704U can control are PLAY, STOP, PAUSE, FF, REW and VCR REC STBY. Among them, VCR REC STBY button doesn't need to be pressed along with VCR CTL.
- If the RM-V704U is not able to control the VCR, use the controls on the VCR.

IMPORTANT

- Although the MBR (Multi-Brand Remote Control) is compatible with JVC VCRs, as well as many VCR models manufactured by others, it is possible that this remote control will not work with your VCR or may offer limited functions.

EDITING TECHNIQUES (Cont'd)





```
    IN          OUT
▶1  0:00:25
 2
 3
 4
 5
 6
 7
 8
 COUNTER    0:00:25
 TOTAL      0:00:00
```

```
    IN          OUT
 1  0:00:25     0:01:05
 2  0:03:18     0:03:31
 3  0:02:33     0:02:53
▶4  0:04:11
 5
 6
 7
 8
 COUNTER    0:04:11
 TOTAL      0:01:13
```

Preparations

- Connect the camcorder and the recording deck as per the diagram on the right (P. 31).

[A]: If the recording deck is a JVC VCR that has a Remote PAUSE terminal, connect the Editing cable to it. (If the VCR does not have a Remote PAUSE terminal, connect to the R.A.EDIT connector.)

[B]: If the VCR has neither a Remote PAUSE nor an R.A.EDIT connector, connect the Editing cable to the RM-V704U's Pause-In jack.

- Camcorder: Correctly insert a recorded tape and set the power switch to "PLAY".
- VCR: Turn power on. Insert a recordable tape, and set to the AUX(iliary) mode. Refer to VCR's manual for details.

To select up to 8 scenes

1. Press PLAY/PAUSE.
2. Press R. A. EDIT.
   - The R. A. Edit counter display will appear in the viewfinder and on the TV screen.
3. Use FF or REW to search for the beginning of a scene you want, press IN/OUT.
   - The in-point's counter reading is registered on the display.
4. Use FF or REW to search for the end of the scene you want, press IN/OUT again.
   - The out-point's counter reading is registered on the display.
   - The "TOTAL" reading shows the total running time of the edited scenes.
5. Specify additional scenes by repeating steps 3 - 4.

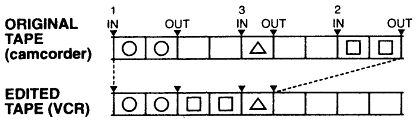
The RM-V704U can also be used for the following:

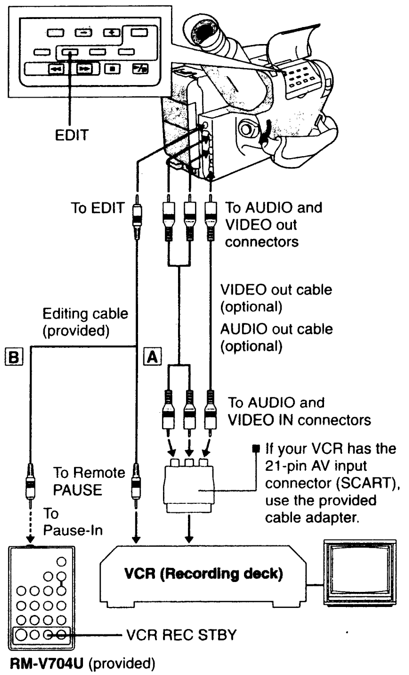
- ON/OFF functions same as R.A.EDIT of the camcorder
- IN/OUT functions same as IN/OUT of the camcorder
- CANCEL functions same as CANCEL of the camcorder

Notes and Advice

- For any scene, the out-point must have a counter reading that is at least 1 second after the in-point. An out-point with a counter reading less than or the same as the in-point will not be registered.
- Since the camcorder prerolls during R.A. Edit, there must be at least 15 seconds worth of recording material prior to any in-point on the playback tape.
- Blank portions of tape cannot be registered as in- or out-points.
- If the search time for an in-point exceeds 5 minutes, the recording deck's Record-Pause mode will be cancelled and editing will not take place.
- Pressing the R.A. EDIT (ON/OFF) button will clear all in- and out-points from memory.
- When editing, a slight discrepancy between the counter reading and actual in- and out-points may occur. Please position your in- and out-points with enough leeway so that segments will be recorded in their entirety (not cut off).

(Continued on next page.)




EDIT
To EDIT
To AUDIO and VIDEO out connectors
VIDEO out cable (optional)
AUDIO out cable (optional)
Editing cable (provided)
B
A
To AUDIO and VIDEO IN connectors
To Remote PAUSE
To Pause-In
VCR (Recording deck)
VCR REC STBY
RM-V704U (provided)

- If your VCR has the 21-pin AV input connector (SCART), use the provided cable adapter.

To make corrections

During steps 3 and 4 on the previous page, pressing CANCEL will erase the last in- or out-point. Pressing again will erase the point before that, and so on.

For automatic editing to a VCR

1. Put the VCR in the Record-Pause mode.
   RM-V704U can also be used.
   - Point the remote control toward the VCR's infrared sensor window and press VCR REC STBY.
   - Be sure that the VCR enters the Record-Pause mode. If not, use the controls on the VCR to enter the Record-Pause mode.

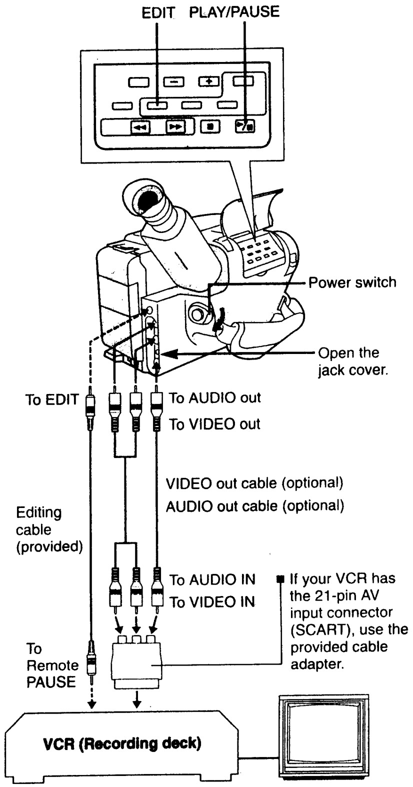
   Note:
   With some manufacturer's VCR's, pressing VCR REC STBY may not place the VCR into the Record-Pause mode.
2. Press the camcorder's EDIT.
   - The function begins automatic editing; all the scenes are copied to the VCR in the specified order.
   - Keep the remote control pointed toward the VCR's remote sensor window. (in case of [B])
   - The on-screen display remains superimposed while the camcorder searches for each scene (the blinking cursor points to the scene number presently being searched), and is not displayed while the scenes are being edited.
   - When R. A. Edit is finished, the camcorder enters the Still mode and the VCR enters the Record-Pause mode. Press STOP on both units to end R. A. Edit.

To dub the entire tape without any edits

To make a duplicate copy of the camcorder's tape, perform R. A. Edit by specifying only one in-point (and no out-point). R. A. Edit will automatically dub everything from that in-point to the end of the tape.

Notes and Advice

- With some VCR models, there may be noise at the in- or out-points on the edited tape.



- If your VCR has the 21-pin AV input connector (SCART), use the provided cable adapter.

TAPE DUBBING

Preparations

- Connect the camcorder and the VCR as shown in the diagram on the left.
  —The editing cable is used to connect the camcorder and a JVC VCR with a Remote PAUSE terminal.*
  (If the VCR does not have a Remote PAUSE jack, you can use the R.A. EDIT jack if one is available. See additional notes on Dubbing using the editing cable below.)
- Set the power switch to "PLAY".
- Turn on the VCR.
- Correctly insert the appropriate cassettes into the camcorder and the VCR.

1 Engage the VCR's AUX(iliary) mode and Record-Pause mode.

2 Engage the camcorder's play mode to locate a position on the tape slightly before edit-in point. When this point is reached, press PAUSE to enter the still mode.

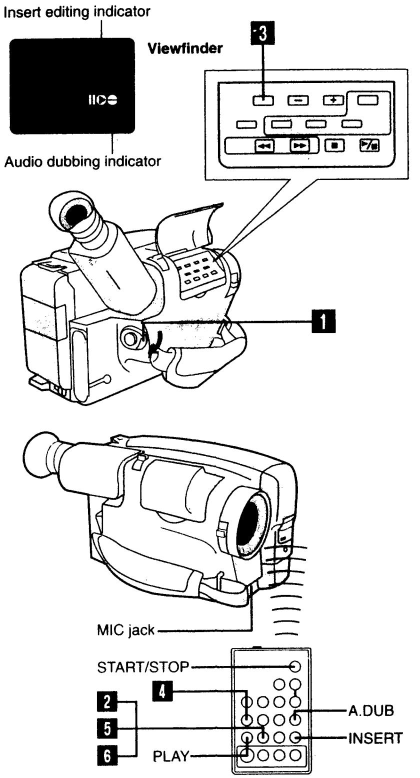
3 Press the camcorder's EDIT and set the VCR's recording mode to start editing.
—The camcorder rolls back the tape a little before it starts playback.

4 When the tape reaches the edit-out point, put the VCR's Record-Pause mode and the camcorder's still mode.

- Repeat steps **2** - **4**.
- Stop both the camcorder and the VCR when dubbing is finished.

Notes and Advice

- ***Dubbing using the editing cable to connect the camcorder and the JVC VCR with a Remote PAUSE terminal**
  — When the camcorder's EDIT is pressed at step **3**, the VCR automatically starts recording. When the camcorder's PLAY/PAUSE is pressed, the VCR automatically enters the Record-Pause mode.
  — Reset the camcorder's counter in advance to "M0:00:00" at an edit-out point. When the tape reaches the point (counter reading of 0:00:00) during dubbing, the camcorder enters the Still mode and the VCR enters the Record-Pause mode automatically. This function is called "Master Edit Control System".
- ● There are some VCRs which are not compatible with the Master Edit Control system.
- ● When the tape reaches the preset edit-out point (M0:00:00)during the dubbing operation, it may stop slightly before or after the designated point on the tape.



RM-V704U (provided)

INSERT EDITING/AUDIO DUBBING

- Insert Editing means recording a new scene into a section of prerecorded tape so that a part of the original recording can be replaced with a new sequence without excessive picture distortion at the edit-in and edit-out points. In the Insert Editing mode, the original audio on the normal audio track remains unchanged.
- Audio Dubbing means recording a new soundtrack on a pre-recorded tape, i.e., replacing the original sound with new audio material.
  Audio Dubbing is applicable only to the longtudial audio track (normal audio). Audio Dubbing on the Hi-Fi audio track cannot be performed.

1 Set the power switch to "PLAY".

2 Locate the desired edit-out point on the tape and press PAUSE.

3 Press COUNTER R/M for more than 2 seconds, then press it once again for less than 1 second to set the counter to "M 0:00:00".

4 Press REW to rewind the tape a little beyond the beginning of the scene you wish to insert/dub audio.

5 Press PAUSE exactly at the beginning of the scene.

Insert Editing

6 While holding INSERT pressed, press PAUSE.
— The camcorder enters the Insert Editing mode with the scene at which the camcorder is aimed appearing on the screen for monitoring.

7 Press START/STOP to insert the new sequence.

- When the counter reading of "0:00:00" is reached, Insert Editing stops automatically and the camcorder enters the Playback mode.

Audio Dubbing

6 While pressing A.DUB, press PAUSE to enter the Audio Dub Standby mode.

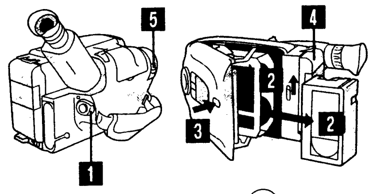
7 Press PLAY. — Audio Dubbing begins.

- When the counter reading of "0:00:00" is reached, Audio Dubbing stops automatically and the camcorder enters the Playback mode.

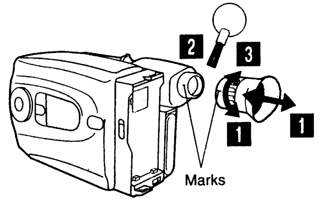
Notes and Advice

- If the tape has a blank segment, Insert Editing/Audio Dubbing may not function properly.
- When in the Still mode, the counter indication may be blurred. This is normal.
- When the tape reaches the preset edit-out point during the editing operation, it may stop slightly before or after the designated point on the tape. Also, at that time, noise bars may appear momentarily. Neither of these is a defect of the unit.
- Only video and Hi-Fi audio signals are recorded in the Insert Editing mode. When the normal sound is to be recorded, press A. DUB and PAUSE simultaneously in the Insert Pause mode. When INSERT and PAUSE are pressed simultaneously again, the unit re-enters the Video- and-Hi-Fi-audio-signals-only Recording mode.
- Tapes with their safety tabs removed cannot be Insert-Edited/Audio-Dubbed. Reseal the safety tab slot to perform the dubbing.
- If whistling or howling is heard during Insert Editing/Audio Dubbing, reduce the TV volume or move the mike farther away from the TV.
- If the camcorder is connected to the TV, noise may appear on the screen during the Audio Dubbing procedure. This phenomenon is not recorded on the tape.
- An external microphone can be used for Audio Dubbing. Connect it to the MIC jack.
- Press AUDIO SEL. to select the required playback audio soundtrack. (☞ P. 27)
  ● The Audio-Dubbed sound only: NOR. ● The original Hi-Fi sound only: HIFI ● Both: MIX

AFTER USE



1 Set the power switch to "POWER OFF" to turn power off.
2 Slide EJECT to open the cassette holder, then remove the cassette.
3 Close and lock the cassette holder by pressing PUSH.
4 Press BATT. RELEASE to remove the battery pack.
5 Slide the LENS COVER open/close switch to close the lens cover.

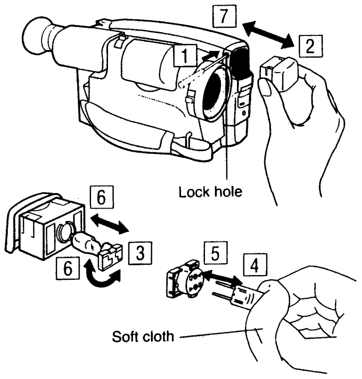


HOW TO CLEAN THE CAMCORDER

When the camcorder's exterior is dusty, clean by gently wiping with a soft cloth.

HOW TO CLEAN THE LENS

When the lens is dirty or dusty, blow it with a blower brush and then gently wipe with lens cleaning paper.



HOW TO CLEAN THE VIEWFINDER

The viewfinder eyepiece can be removed for cleaning.

1 Turn the eyepiece counterclockwise and pull it out.
2 Remove dust with a blower brush.
3 Align the marks, reattach the eyepiece and turn it clockwise.

HOW TO REPLACE THE VIDEO LIGHT BULB

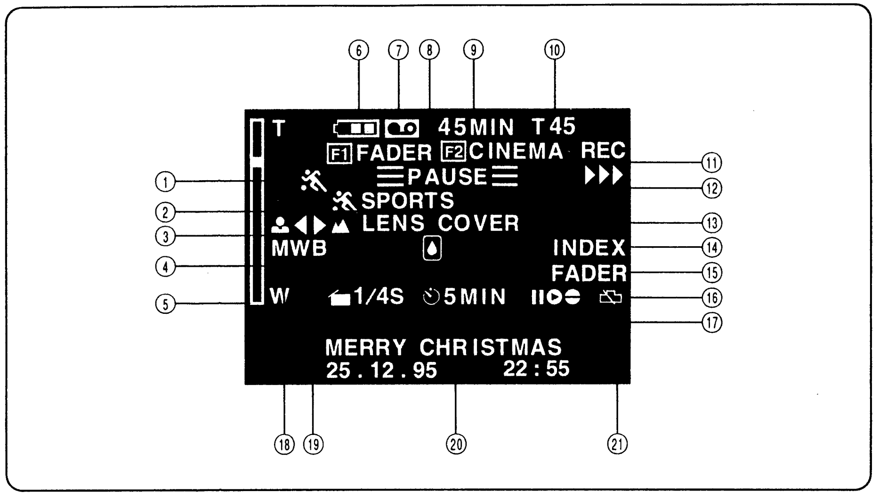
It is recommended to consult your nearest JVC dealer for replacing the bulb. However, if you wish to do it yourself, proceed as follows:

1 Insert a flat and narrow object into the lock hole.
2 Pull out the video light unit.
3 Turn the bulb unit counterclockwise to remove it.
4 Pull out the bulb.
5 Insert a new bulb. At this time it is important to hold the bulb using a soft cloth. Do not touch the bulb directly.
6 Replace the bulb unit.
7 Reattach the video light unit.

Notes and Advice

- Avoid using of strong cleaning agents such as benzine or alcohol as they may damage the exterior.
- The video light unit and the bulb are very hot immediately after the power is turned off. Bulb replacement should be performed after it has cooled. (It will take approx. 30 minutes to cool sufficiently.)
- Do not touch the bulb directly. If it is becomes dirty, smoke or reduced service life may result. When accidentally touched by your fingers, wipe it with a soft cloth.
- Give the part number YQ20645-001 when ordering a video light bulb.
- Use the exclusive halogen bulb which is available at your nearest JVC dealer.

VIEWFINDER INDICATIONS



①, ② **Programme AE indicator (☞ P. 16)**
Displayed at ② for approx. 3 seconds when the PROGRAM AE select dial is switched from one position to another. Then only the indicator remains at ①.

③ **Focus indicator (☞ P. 18, 19)**

④ **White balance mode indicator (☞ P. 22)**

⑤ **Zoom level indicator (☞ P. 14)/**
Exposure indicator bar (☞ P. 19)

⑥ **Battery pack's remaining power indicator**
Changes as follows according to the battery pack's remaining power level: ▮▮▮→▮▮→▮→▭
When the battery power is coming to an end, a battery indicator (▭) blinks in the viewfinder. After indication blinks, the power turns off automatically. Replace the battery pack with a fully charged one. (☞ P. 7, 8)

⑦ **Cassette warning**
Blinks to warn that no cassette without safety tab is loaded.

⑧ **Intelligent function control indicator (☞ P. 17 – 21)**

⑨ **Remaining tape time (☞ P. 11)**

⑩ **Tape length indicator (☞ P. 11)**

⑪ **Recording indicator (☞ P. 12)**

⑫ **Recording-Standby indicator: ≡PAUSE≡ (☞ P. 12)**
Auto Pause indicator: AUTO PAUSE (☞ P. 13)

⑬ **Lens cover warning**
Blinks for approx. 5 seconds, whether the lens cover is open or closed, everytime the unit is turned on. Lets the user check to see if the cover is open.

⑭ **Index Code Marking (☞ P. 14)**

⑮ **Fade-Standby indicator (☞ P. 17)**

⑯ **Clock battery warning**
Blinks when the clock (lithium) battery is not in place or exhausted. In this condition, no date/time function is available. (For inserting or replacing the clock battery, ☞ P. 10)

⑰ **Insert Editing/Audio Dubbing indicators (☞ P. 33)**

⑱ **Condensation warning**
Blinks when moisture condensation occurs on the head drum. While the indication is in the viewfinder, the unit's functions come to a halt. Turn off the unit and leave it for a few hours. Then turn on the unit. A few minutes later, the warning should disappear.

⑲ **Instant title (☞ P. 21)**

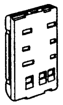
⑳ **Date/Time/Character (☞ P. 20, 21)**

㉑ **Interval time/Recording time indicator**
For Self-Timer, Animation and Time-Lapse functions (☞ P. 16, 23, 24)

SYSTEMS FLEXIBILITY

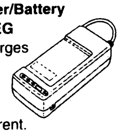
For maximum enjoyment, make the most of the provided or optional accessories depending on the situation.

- **Battery pack**
  BN-V12U
  BN-V22U
  BN-V25U
  BN-V60U



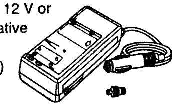
*Recording time ☞ P. 7

- **AC Power Adapter/Battery Charger AA-V11EG**
  Charges or discharges battery pack or powers the camcorder via household AC current.
  (Can be used with 110 V to 240 V.)



*Charging time ☞ P. 8

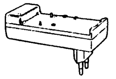
- **Car battery charger BH-V3E**
  Charges battery pack or powers the camcorder via a car battery.
  (Use with 12 V or 24 V nagative grounded cars only.)



*Charging time

BN-V12U	Approx. 50 min.
BN-V22U	Approx. 90 min.
BN-V25U	Approx. 120 min.
BN-V60U	Approx. 90 min.

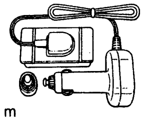
- **Battery charger BH-VC10EG**
  Use to charge the battery pack.



*Charging time

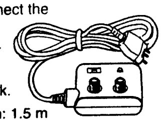
BN-V12U	Approx. 7 hours
BN-V22U	Approx. 13 hours
BN-V25U	Approx. 17 hours
BN-V60U	Approx. 13 hours

- **Car battery cord AP-V7E**
  Power the camcorder via a car battery.
  (Use with 12 V negative grounded cars only.)



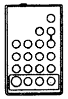
*Cable length: 2 m

- **RF unit RF-V5E**
  Use to connect the camcorder to a regular television for playback.

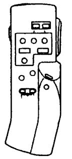


*Cable length: 1.5 m

- **Wireless remote control unit RM-V704U**

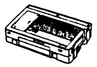


- **Wired remote control unit RM-V20U**
  Controls the camcorder's functions (POWER ON/OFF, REW, FF, STOP, PLAY, PAUSE, INSERT, AUDIO DUB, REC TIME, INTERVAL, VISS, START/STOP, ZOOM T/W) from a distance, and from any direction.

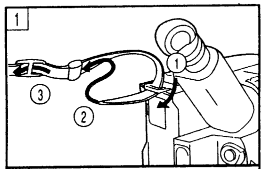


*Cable length: 3 m

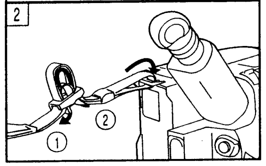
- **Compact VHS (VHS-C) cassettes EC-45/30**
  Allows 45/30 minutes of VHS recording and playback respectively.

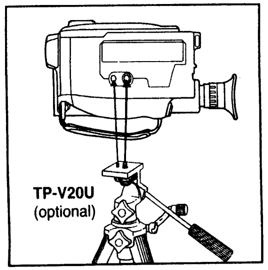


1



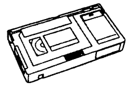
2





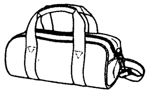
TP-V20U
(optional)

- **Cassette adapter C-P6U/C-P7U**
  Enables the VHS-C cassette to be used with regular VHS machines.



- **AUDIO and VIDEO output cable PQ33900A**

- **Active carrying bag CB-V7U**



*Dimensions (WxHxD):
340 x 170 x 155 mm

Some accessories are not available in some areas. Please consult your nearest JVC dealer before purchasing optional accessories.

ATTACHING THE SHOULDER STRAP

1. Loop the end of the strap over the top of the eyelet ①, then, folding it back, thread the end of the strap first through the keeper ②, then the buckle ③. Making sure that the strap is not twisted, repeat the above procedure to attach the other end of the strap to the other eyelet.
2. Adjust the shoulder strap to the desired length ①, then slide both keepers up snug against the eyelets to prevent the strap from slipping ②.

TRIPOD MOUNTING

Align the screw and camera direction stud of the tripod with the camera's tripod mounting socket and stud hole, and firmly tighten the screw.

HELPFUL TERMS AND INFORMATION

The following glossary is for your convenience in helping you better understand your camcorder and its operation.

Auto Gain Control: (☞ P. 16)
Automatically increases camera sensitivity when the illumination falls below a certain level.

Auto Pause System: (☞ P. 13)
Prevents shooting unnecessary scenes by mistake when the camcorder is pointed straight down (i.e., the ground, feet).

AUX mode: (☞ P. 28, 30, 32)
Refers to Auxiliary mode. When the camcorder is connected to a VCR for editing or dubbing, the VCR should be set to this mode.

AV:
Short for Audio/Video. Often refers to the audio (sound) and video (picture) signals which, when combined, make up a programme.

CCD (Charge Coupled Device):
Solid-state imaging device used in camcorders as the camera's image pickup; analogous to the eye's retina except that picture information is output as electric signals.

Colour temperature: (☞ P. 22)
A measurement in Kelvin degrees which indicates the colour contents of a light source; bluish light has a higher colour temperature than reddish light. To reproduce white as white under different types of lighting, the chrominance signal must be adjusted to match the light source's colour temperature.

Head:
An electronic component which "writes" or "reads" video and audio signals on the tape.

HQ (High Quality):
An enhancement feature in the VCR circuitry which provides greater picture detail.

Quick review: (☞ P. 13)
Permits reviewing of the final part of the last recorded segment in the Record-Standby mode.

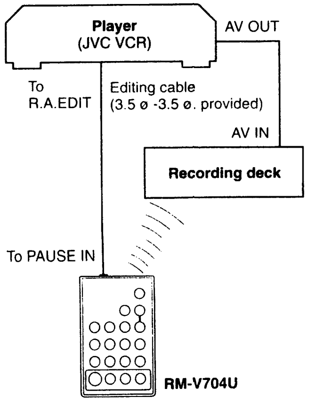
R.A.Edit (Random Assemble Editing): (☞ P. 29)
This feature lets you pre-select up to 8 scenes to be automatically rearranged and edited to a connected VCR.

Refresh: (☞ P. 8)
A feature on the AC power adapter that lets you completely discharge the power from the battery pack before charging again. Contributes to longer battery life.

Tracking: (☞ P. 26)
A mechanism enabling the tracking position to be adjusted during playback so that the heads can accurately pick up the recorded signal in the best condition.

VCR: (☞ P. 28, 30, 32)
Short for Video Cassette Recorder.

SUPPLEMENTAL INFORMATION ON THE REMOTE CONTROL



Using the RM-V704U remote control, it is also possible to perform deck-to-deck Random Assemble Editing. The playback deck must be an R.A. Edit-capable JVC VCR. The recording deck can be...

- a VCR other than JVC, or
- a JVC VCR which has neither a Remote PAUSE nor an R.A. EDIT connector

How to use:

— Connect the playback deck and RM-V704U as shown on the left.
— Set the RM-V704U to correspond to the brand of the recording deck. (☞ P. 29)
— For Random Assemble Editing procedure, please refer to the instruction manual of the JVC VCR you are using as the playback deck.

Notes:

- RM-V704U cannot be used to control the playback deck.
- RM-V704U is capable of controling basic operations of the recording deck. While pressing VCR CTL, press PLAY, STOP, PAUSE, FF or REW for these functions. (Not possible with some brands and models). Other buttons cannot be used.
- To put the recording deck in the Record-Pause mode, use the controls on the recording deck itself.

CAUTIONS

For safety, strictly observe the following instructions.

- Do not open the camcorder's chassis.
- Prevent inflammables, water and metallic objects from entering the unit.
- Do not disassemble or modify the unit.
- Do not use the unit when there is lightning in the vicinity. Disconnect the power cable of connected equipment.
- Do not short-circuit the terminals of the battery packs. When carrying a battery pack, keep it away from metallic objects (key holder, necklace, etc.) by putting it in a vinyl bag, etc. This can prevent accidents.

Avoid using the unit under the following conditions:

- Places subject to excessive humidity or dust.
- Near appliances generating strong magnetic or electric fields (speakers, broadcasting antennas, etc.).
- Places subject to soot or steam such as near a cooking stove.
- Places subject to excessive shock or vibration.
- Near a television set (rolling pictures or howling might result).
- Extremely hot places.

Do not expose the unit to high temperatures over 40°C for long periods.

If the unit should be subjected to direct sunlight, or left in a closed car in summer, or placed near a heater, the CCD and the auto-focus sensor may deteriorate and the cabinet may become deformed. Furthermore, this also may cause the transistors and other electronic and mechanical parts to malfunction. Remember the following:

- Do not leave the unit in places of over 50°C.
- Do not use the unit in places of over 40°C.
- Do not use the unit in places of below 0°C.
- Protect the unit from excessively dry or humid conditions (below 35% or above 80% humidity).
- For long storage, select a place between –20°C and 30°C.

Be careful when using the video light.

- The video light becomes extremely hot. Do not touch it either while in operation or soon after turning it off, otherwise serious injury may result.
- Do not place the camcorder into the carrying case immediately after using the video light, since it remains extremely hot.
- When operating, keep a distance of about 30 cm between the video light and people or object.
- Do not use near flammable or explosive materials.

Take special care for protection of the unit.

- Do not allow the unit to become wet.
- Do not leave the unit in closed cars on hot summer days.
- Take special care not to drop the unit or strike it against hard objects. Protect from shocks during transportation.

Make it a rule to observe the following instructions.

- Do not remove the battery pack or disconnect other power supply units while the power is on. If not observed, this will cause tape damage and missoperation.
- When the unit is not in use, remove the battery pack.

Keep the lens and viewfinder eyepiece always clean.

- When the lens is dirty or dusty, blow it off first and then gently wipe with a soft brush or lens cleaning paper.
- Mold may form if the lens is left dirty.

Handle the unit carefully.

- Protect the microphone from excessive shocks.
- Do not carry the unit by holding it only by the viewfinder.
- Avoid undue strain on the camcorder's shoulder strap, such as unnecessarily swinging the camcorder.

Moisture condensation.

- You have observed that pouring a cold liquid into a glass will cause drops of water to form on the glass's outer surface. This same phenomenon occurs on the head drum of a camcorder when it is moved from a cool place to a warm place, after heating a cold room, under extremely humid conditions or in a place directly subjected to the cool air from an air conditioner.
- Moisture on the head drum can cause severe damage to the video tape, and can lead to internal damage to the camcorder itself.
- If moisture condensation occurs on the head drum, a condensation warning appears in the viewfinder and the unit enters the Stop mode, unable to function. In such a case, turn off the unit, and leave it for a few hours. Then set the power switch to "CAMERA" or "PLAY". A few minutes later, the warning should disappear.

Be careful not to damage the CCD.

- Do not keep the lens directed at extremely bright objects such as the sun or other light sources for long periods. Although the CCD is less susceptible to such burn than a tube would be, caution should be exercised when using this unit. Most importantly, the lens should be capped except while actually shooting.
- Do not direct the eyepiece of the viewfinder at the sun.

Maintenance

- When the cabinet is dusty, clean by gently wiping with a soft cloth.
- Avoid the use of strong cleaning agents such as benzine or alcohol as they may damage the cabinet.
- Cleaning should be done only after the battery pack has been removed or other power units have been disconnected.

Serious malfunctioning

If malfunctioning occurs, stop using the unit immediately and consult your local JVC dealer.

General Battery Precautions

- When the RM-V20U/C-P6U/C-P7U is not functioning even when correctly operated, the batteries are exhausted. Replace them with fresh batteries.
- Use only following batteries in the unit.

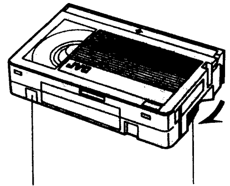
RM-V20U ....R03 (AAA) size
C-P6U/C-P7U ....R6 (AA) size

Please make note of the following rules for battery use. When misused, batteries can leak or explode.

1. Insert the batteries correctly according to the diagram inside the battery section.
2. Do not use old and new batteries together.
3. Do not use two different kinds of batteries. Although sizes may be the same, voltages may differ.
4. Do not expose batteries to excessive heat as they can leak, or explode. Do not dispose of batteries in a fire.
5. Remove batteries from the unit if it is to be stored for an extended period to avoid battery leakage which can cause malfunctions.

VIDEO CASSETTES

- The camcorder employs only the cassettes carrying the VHS-C mark.
- Recording onto prerecorded tapes automatically erases the previously recorded video and audio signals.
- An inverted cassette cannot be inserted.
- Do not load and unload the cassette repeatedly without allowing the tape to run at all. This will slacken the tape and thereby damage it.
- Make certain before loading the cassette that the tape is not slack. If there is any slack, turn the gear on the cassette in the direction of the arrow to take up slack.
- The cassette is equipped with a safety tab to prevent accidental erasure. When the tab is removed, recording is impossible. If you wish to record on a cassette whose tab has been removed, use adhesive tape to reseal the slot.
- To avoid excessive exposure to dust and fingerprints, do not open the front tape cover.



Storage of cassettes

- Avoid exposing the cassettes to direct sunlight. Keep them away from heaters.
- Avoid storing the cassettes in humid or dusty places.
- Do not drop the cassettes. Do not expose them to violent vibrations or shocks.
- Do not expose the cassettes to strong magnetic fields (near a motor, transformer or magnet).
- Place the cassettes in cassette cases and position them vertically.

SECTION 1
DISASSEMBLY

1.1 SERVICE CAUTIONS

1.1.1 Precautions

1. Before disassembling/re-assembling the set as well as soldering parts, make sure to disconnect the power cable.
2. When disconnecting/connecting connectors, pay enough attention to wiring not to damage it.
3. In general, chip parts such as resistor, shorting jumpers (0-ohm resistor), ceramic capacitors, diodes, etc. can not be reused after they were once removed.
4. When installing parts, be careful not to do with other parts as well as not to damage others.
5. When removing ICs, be careful not to damage circuit patterns.

1.1.2 How to read the disassembly and assembly

(For Cabinet Parts)

STEP /LOC NO.	PART	Fig. No.	REMOVAL	
			*UNLOCK/RELEASE/ UNPLUG/UNCLAMP/ UNSOLDER	Note
①	CASSETTE COVER ASSY	C1	*CONNECTOR Ⓐ	<NOTE 1> <NOTE 2>
②	TOP COVER ASSY	C2	(S2)	<NOTE 3>
③	FRONT COVER ASSY	C3	4(S2) *2CAPS	<NOTE 4>

↑ ↑ ↑ ↑ ↑

① ② ③ ④ ⑤

① : Order of steps in Procedure
When reassembling, preform the step(s) in the reverse order. These numbers are also used as the identification (location) No. of parts Figures.

② : Part to be removed or installed.

③ : Fig. No. showing Procedure or Part Location.

C = Cabinet
CA = Camera
D = Deck

④ : Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or unsoldered.

P = Spring
W = Washer
S = Screw
* = Unhook, unlock, release, unplug or unsolder.
2(S1) = 2 Screws (S1)

⑤ : Adjustment information for installation.

1.1.3 Connection of the wires

1. Pull the connector structure upward to release the clamp when removing or inserting the flat wire cable.

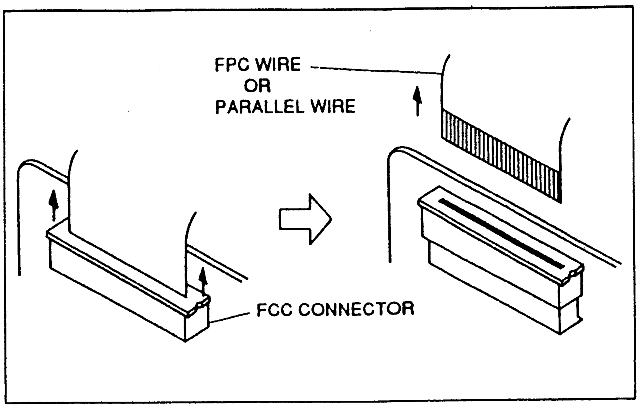


Fig. 1 TYPE A

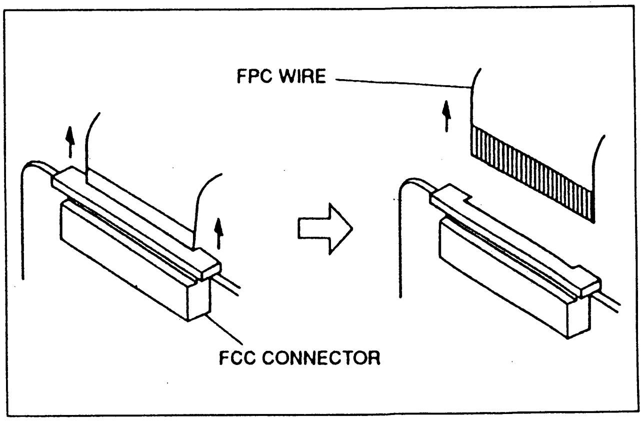


Fig. 2 TYPE B

2. Depress the connector structure downward to release the clamp when removing or inserting the flat wire cable, as indicated below.

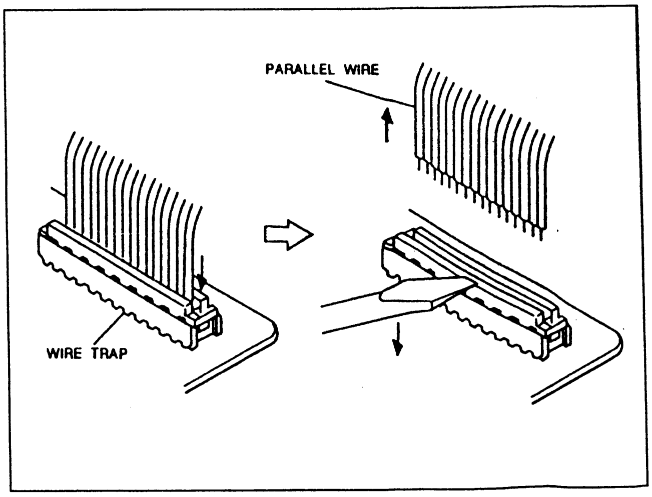


Fig. 3 TYPE C

1.1.4 Main screws to deal with disassembly/assembly

Table 1-1-1 lists screws by their symbols correspond to those shown in figures of this section "Disassembly".

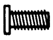
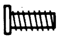
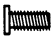
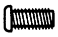
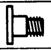
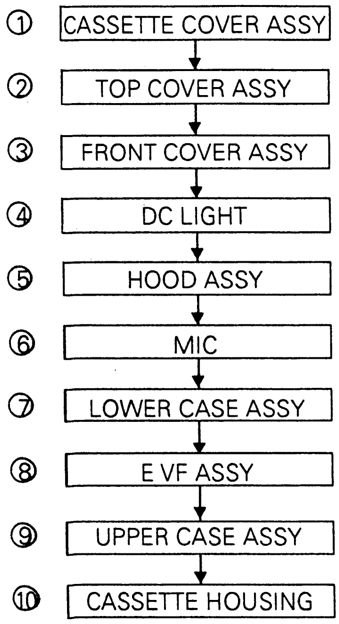
SYMBOL OF SCREW	SHAPE	PART NUMBER
S 1		YQM30032-3-2
S 2		YQM30032-61
S 3		YQM30032-59
S 4		YQM30032-5-2
S 5		SPSH1725M
S 6		SPSP2006Z
S 7		YQM30032-60
S 8		YQ43545
S 9		SPSH1720M
S10		SPSH1725Z
S11		SPSH1730M

Table 1-1-1

1.2 DISASSEMBLY/ASSEMBLY OF CABINET PARTS

1.2.1 Disassembly flow chart

This flowchart indicates the disassembly step for the cabinet parts and P.C. boards in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in reverse order. Bend, route and dress the flat cables as they were originally.


① CASSETTE COVER ASSY
② TOP COVER ASSY
③ FRONT COVER ASSY
④ DC LIGHT
⑤ HOOD ASSY
⑥ MIC
⑦ LOWER CASE ASSY
⑧ E VF ASSY
⑨ UPPER CASE ASSY
⑩ CASSETTE HOUSING

1.2.2 Disassembly method

STEP /LOC NO.	PART	Fig. No.	REMOVAL	
			*UNLOCK/RELEASE/UNPLUG/UNCLAMP/UNSOLDER	Note
①	CASSETTE COVER ASSY	C1	*CONNECTORⒶ	<NOTE 1> <NOTE 2>
②	TOP COVER ASSY	C2	(S2)	<NOTE 3>
③	FRONT COVER ASSY	C3	4(S2) *2 CAPS	<NOTE 4>
④	DC LIGHT	C3	-	-
⑤	HOOD ASSY	C3	2(S2)	-
⑥	MIC	C3	(S2) *CONNECTORⒷ	<NOTE 2>
⑦	LOWER CASE ASSY	C4	9(S2), (S3)	-
⑧	EVF ASSY	C4	2(S4) *CONNECTORⒸ	<NOTE 2>
⑨	UPPER CASE ASSY	C5	7(S2) *CAP (LITIUM)	-
⑩	CASSETTE HOUSING	C6	4(S5)	-

List of Abbreviations:

4(S1) = 4 Screws (S1)
3(L1) = 3 Locking Tabs (L1)
3(SD1) = 3 Solder position (SD1)
3(K1) = 3 Positioning pins (K1)
2(P1) = 2 Springs (P1)
2(W1) = 2 Washers (W1)

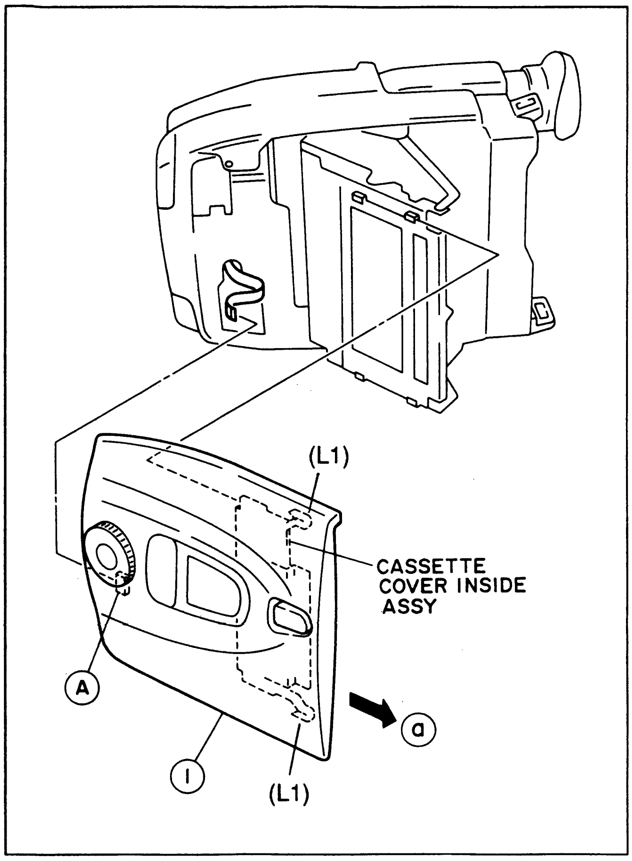

(L1)
CASSETTE COVER INSIDE ASSY
A
1
(L1)
a

Fig. C1

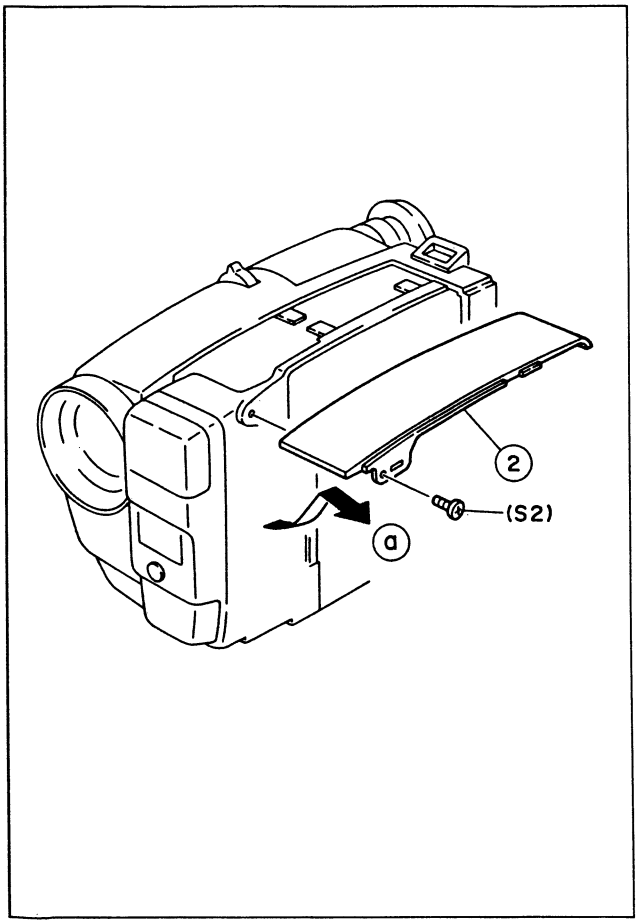


Fig. C2

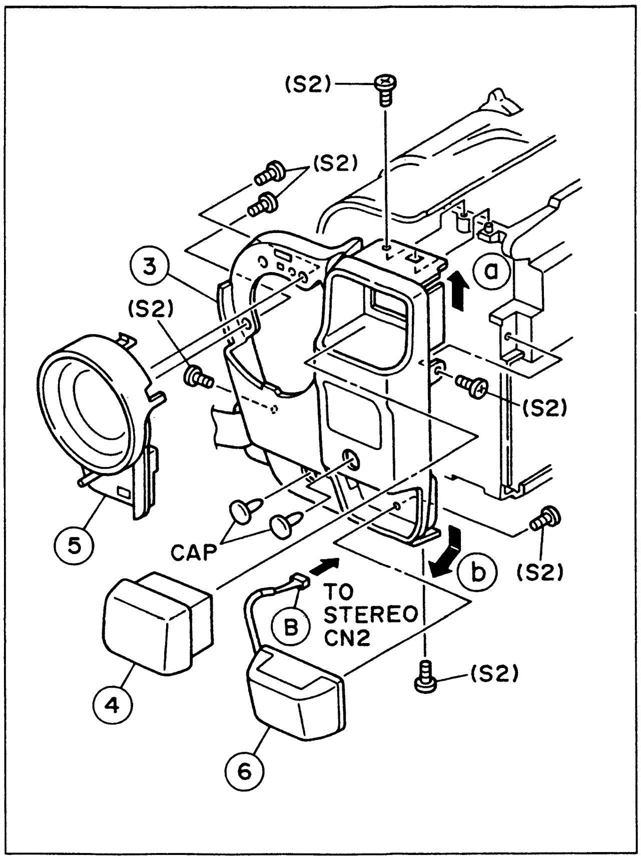

(S2)
(S2)
3
(S2)
a
(S2)
5
CAP
b
(S2)
B
TO STEREO CN2
(S2)
4
6

Fig. C3

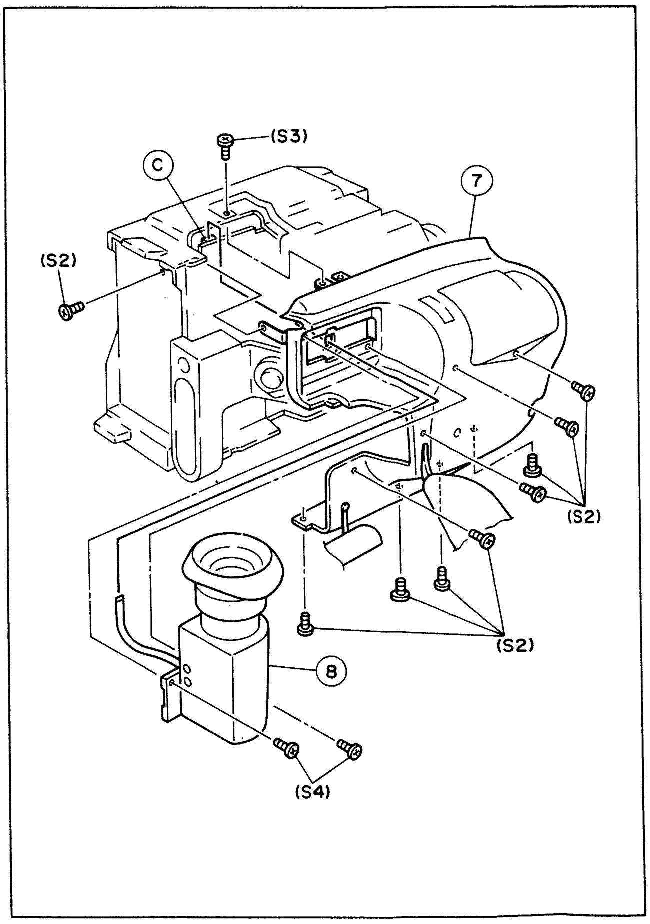

(S3)
C
7
(S2)
(S2)
(S2)
8
(S4)

Fig. C4

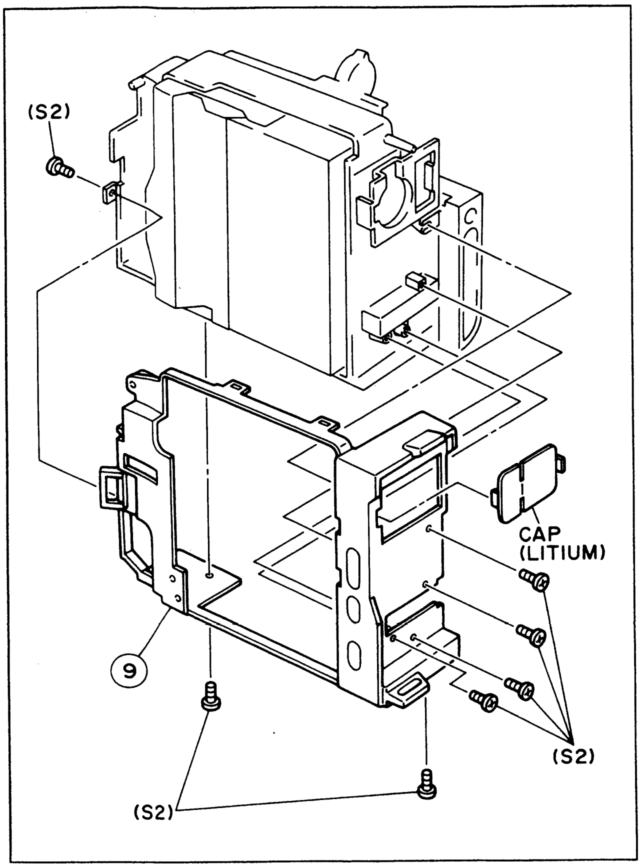


Fig. C5

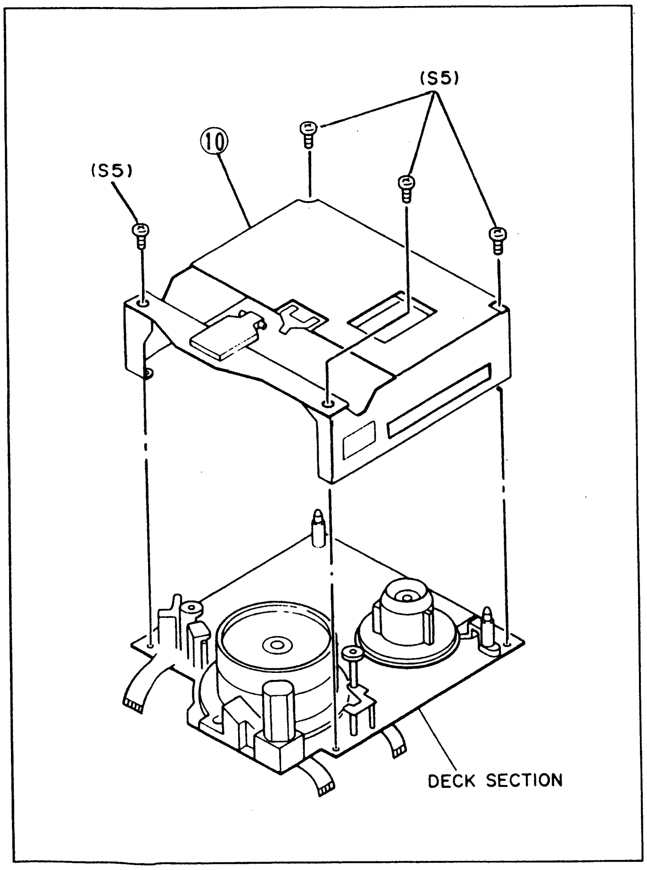


Fig. C6

Reference Notes:

<NOTE 1>

1. Use the AC Power Adaptor (AA-V11U) and supply the DC power to the unit.
   Open the cassette cover by pressing the EJECT switch.
2. Disconnect the DC power source.
3. Pull out either side of cassette cover inside assy and remove ① from the cassette housing in direction of arrow ⓐ, and disconnect connector Ⓐ.

<NOTE 2>

Destination of connectors

Note: ***Three kinds of double-arrows in connection tables respectively show kinds of connector/wires.***

⬌ : Board to Board connector

⇔ : Flat wire

↔ : Wire

Con-nector	No. of Pins	Connector
Ⓐ	10	CAMERA OPERATION ⇔ MAIN CN7
Ⓑ	3	MIC ↔ STEREO CN2
Ⓒ	10	E VF ⇔ MAIN CN14

<NOTE 3>

Remove one screw (S2), pull ② in direction of front side and remove it in direction of the arrow ⓐ.

<NOTE 4>

Remove two caps and remove four screws (S2).
Lift up the top of ③ in direction of arrow ⓐ and remove it in direction of the arrow ⓑ.

1.3 DISASSEMBLY/ASSEMBLY OF CAMERA PARTS

1.3.1 Disassembly flow chart

This flowchart indicates the disassembly step for the CAMERA parts and P.C. boards in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in reverse order. Bend, route and dress the flat cables as they were originally.

① CCD BOARD ASSY
② OP BLOCK ASSY
③ CCD IMAGE SENSOR
*Refer to section 1.6

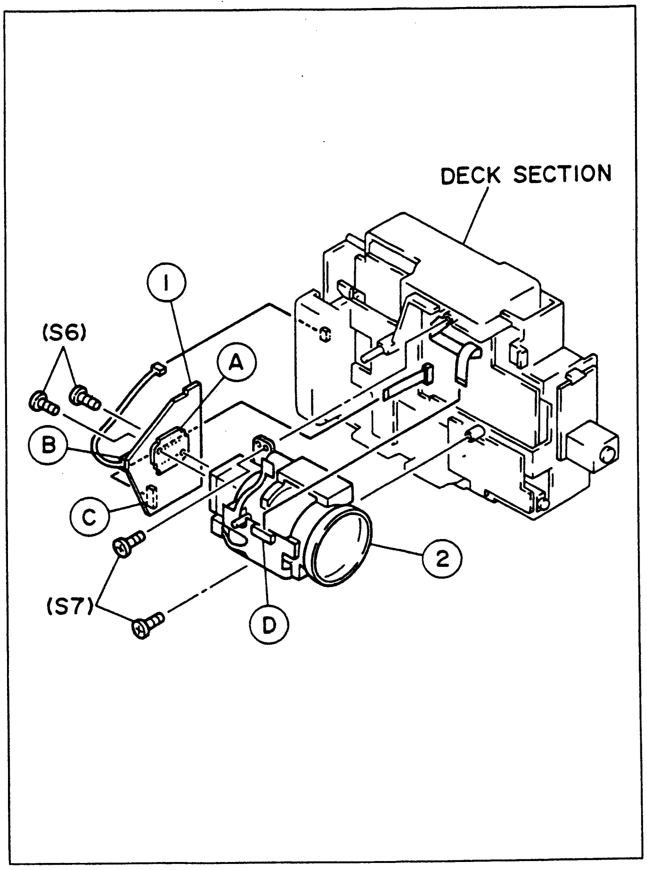


Fig. CA1

1.3.2 Disassembly method

STEP /LOC NO.	PART	Fig. No.	REMOVAL	
			*UNLOCK/RELEASE/ UNPLUG/UNCLAMP/ UNSOLDER	Note
①	CCD BOARD ASSY	CA1	2(S6) *CONNECTOR Ⓐ-Ⓒ	<NOTE 1> <NOTE 2>
②	OP BLOCK ASSY	CA1	2(S7) *CONNECTOR Ⓓ	<NOTE 1>

List of Abbreviations:
4(S1) = 4 Screws (S1)
3(L1) = 3 Locking Tabs (L1)
3(SD1) = 3 Solder position (SD1)
3(K1) = 3 Positioning pins (K1)
2(P1) = 2 Springs (P1)
2(W1) = 2 Washers (W1)

Reference Notes:
<NOTE 1>
Destination of connectors

Note: *Three kinds of double-arrows in connection tables respectively show kinds of connector/wires.*
⬌: Board to Board connector
⇔: Flat wire
↔: Wire

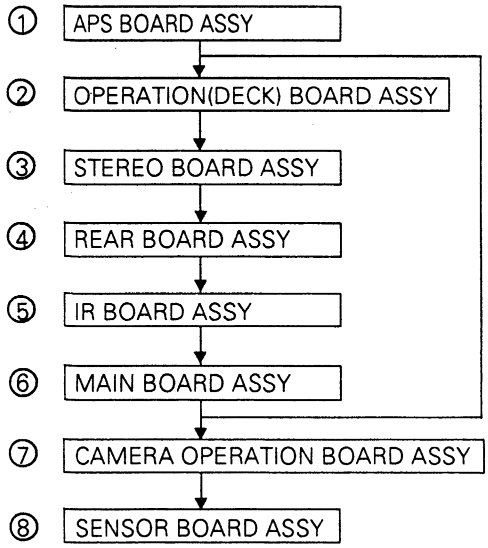
Connector	No. of Pins	Connector		
Ⓐ	16	CCD CN201	⬌	CCD SOCKET
Ⓑ	4	CCD CN203	↔	REAR CN3
Ⓒ	28	CCD CN202	⇔	MAIN CN12
Ⓓ	22	OP BLOCK	⇔	MAIN CN11

<NOTE 2>
1. Remove two screws (S6).
2. Disconnect connectors Ⓑ and Ⓒ.
3. Move the CCD board in the direction of the rear side. At that time, pay careful attention to pins (connector Ⓐ) of the CCD image sensor so as not to damage them.

1.4 DISASSEMBLY/ASSEMBLY OF DECK PARTS

1.4.1 Disassembly flow chart

This flowchart indicates the disassembly step for the DECK parts and P.C. boards in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in reverse order. Bend, route and dress the flat cables as they were originally.


① APS BOARD ASSY
② OPERATION(DECK) BOARD ASSY
③ STEREO BOARD ASSY
④ REAR BOARD ASSY
⑤ IR BOARD ASSY
⑥ MAIN BOARD ASSY
⑦ CAMERA OPERATION BOARD ASSY
⑧ SENSOR BOARD ASSY

1.4.2 Disassembly method

STEP /LOC NO.	PART	Fig. No.	REMOVAL	
			*UNLOCK/RELEASE/ UNPLUG/UNCLAMP/ UNSOLDER	Note
①	APS BOARD ASSY	D1	(S7) *CONNECTOR Ⓐ	<NOTE 1>
②	OPERATION (DECK) BOARD ASSY	D1	2(S7) *CONNECTOR Ⓑ	<NOTE 1>
③	STEREO BOARD ASSY	D1	2(S7) *CONNECTOR Ⓒ	<NOTE 1>
④	REAR BOARD ASSY	D1	*CONNECTORS Ⓓ - Ⓕ	<NOTE 1>
⑤	IR BOARD ASSY	D1	*CONNECTORS Ⓖ	<NOTE 1>
⑥	MAIN BOARD ASSY	D1	2(S8), (S9), (S1) *FRAME ASSY *CONNECTORSⒽ-Ⓝ	<NOTE 1> <NOTE 3>
⑦	CAMERA OPERATION BOARD ASSY	D2 D3	3(S2), (S1), 2(L1) *PUSH BUTTON *CASSETTE COVER INSIDE ASSY	<NOTE 2>
⑧	SENSOR BOARD ASSY	D4	2(S10), 4(S11) *WORM BRACKET	-

List of Abbreviations:
4(S1) = 4 Screws (S1)
3(L1) = 3 Locking Tabs (L1)
3(SD1) = 3 Solder position (SD1)
3(K1) = 3 Positioning pins (K1)
2(P1) = 2 Springs (P1)
2(W1) = 2 Washers (W1)

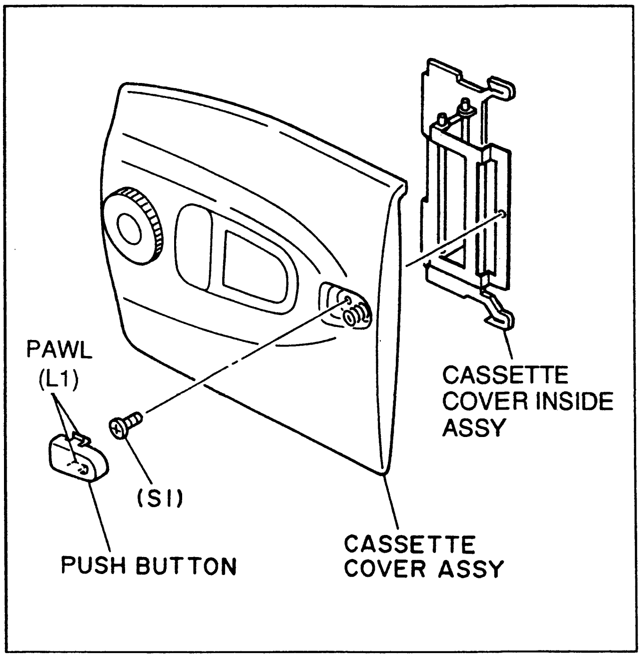

PAWL
(L1)
(S1)
PUSH BUTTON
CASSETTE COVER INSIDE ASSY
CASSETTE COVER ASSY

Fig. D2

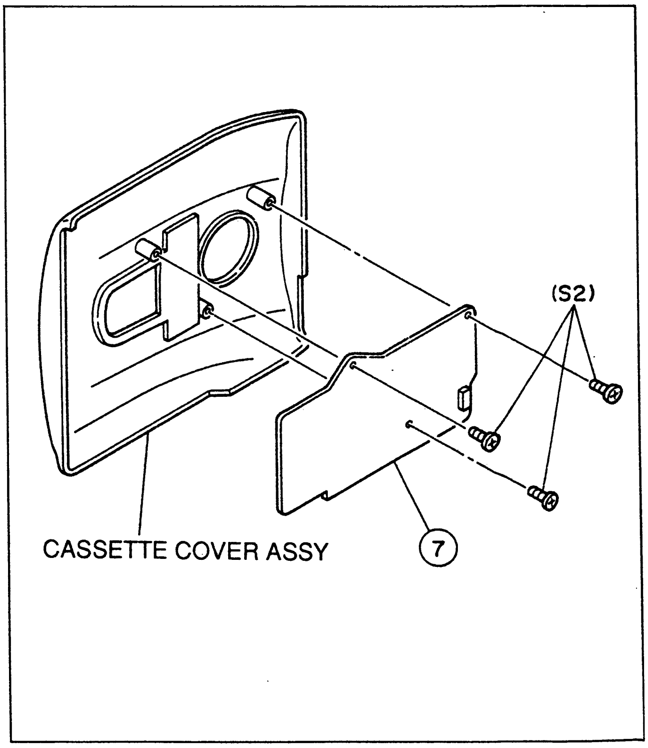

(S2)
CASSETTE COVER ASSY
⑦

Fig. D3

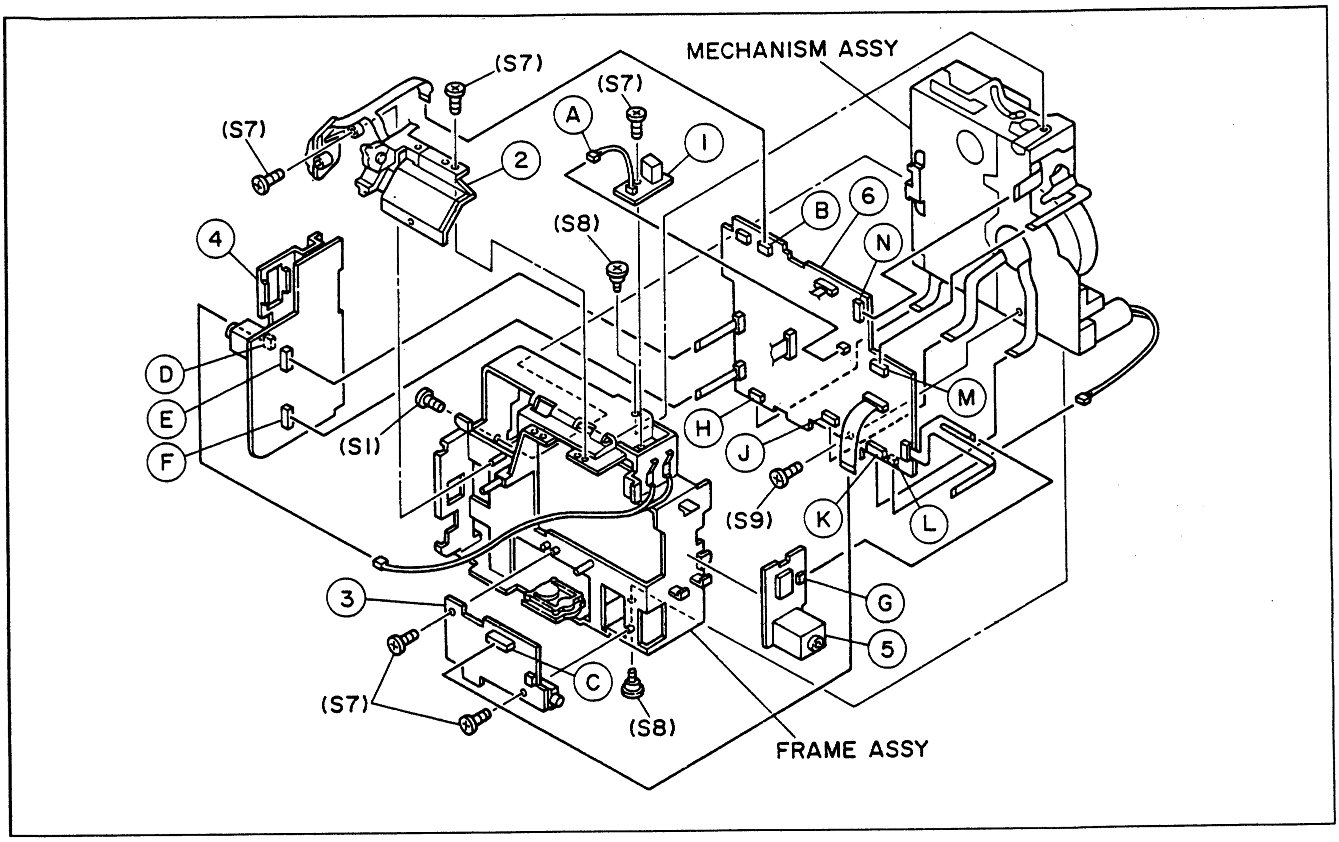

(S7)
MECHANISM ASSY
(S7)
(S7)
A
2
I
(S8)
B
6
N
4
D
E
F
(S1)
H
M
J
(S9)
K
L
G
3
5
C
(S7)
(S8)
FRAME ASSY

Fig. D1

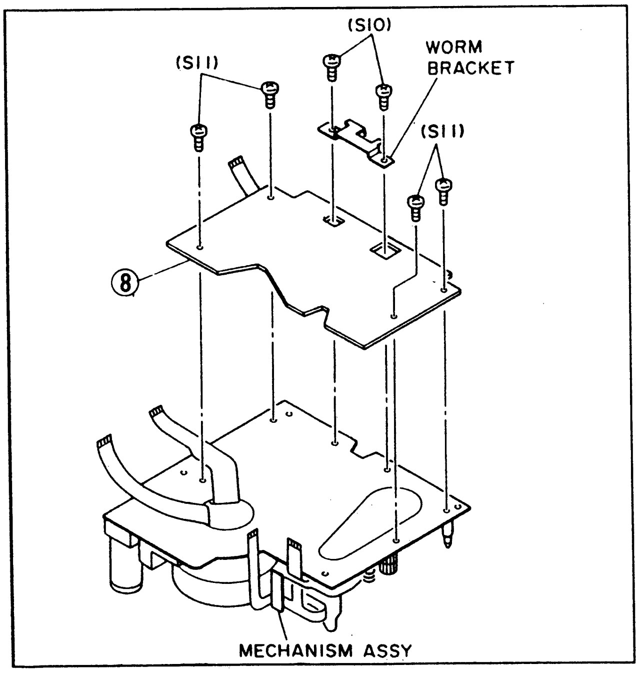

(S10)
(S11)
WORM
BRACKET
(S11)
⑧
MECHANISM ASSY

Fig. D4

Reference Notes:
<NOTE 1>
Destination of connectors
Note: *Three kinds of double-arrows in connection tables respectively show kinds of connector/wires.*

⬌ : Board to Board connector
⇔ : Flat wire
↔ : Wire

Con-nector	No. of Pins	Connector
Ⓐ	3	APS CN1 ↔ MAIN CN9
Ⓑ	13	OPERATION (DECK) ⇔ MAIN CN13
Ⓒ	22	STEREO CN1 ⇔ MAIN CN19
Ⓓ	2	REAR CN4 ⇔ LAMP
Ⓔ	22	REAR CN2 ⇔ MAIN CN15
Ⓕ	18	REAR CN1 ⇔ MAIN CN16
Ⓖ	6	IR ⇔ MAIN CN7
Ⓗ	14	MAIN CN1 ⇔ SENSOR
Ⓙ	20	MAIN CN2 ⇔ VIDEO HEAD
Ⓚ	18	MAIN CN3 ⇔ DRUM MOTOR
Ⓛ	2	MAIN CN4 ⇔ MODE MOTOR
Ⓜ	11	MAIN CN8 ⇔ A/C HEAD
Ⓝ	18	MAIN CN10 ⇔ CAPSTAN MOTOR

<NOTE 2>
1. To detach the push button, release it from locking by two pawls (L1) and move it.
2. Remove one screw (S1) and remove the cassette cover inside assy. (Fig. D2)
3. Remove three screws (S2) and remove ⑦. (Fig. D3)

<NOTE 3>
When disconnecting, do it very carefully since the other side connector Ⓗ is attached to a flexible wire.

1.5 TO TAKE OUT CASSETTE TAPE

When the deck enters the Emergency mode with cassette tape loaded and it cannot be ejected by pressing the EJECT button, take out of the cassette housing according to the following procedure.

1. Disconnect the deck from the power source.
2. To detach the push button, release it from locking by three pawls by using (–) screw driver as shown in the magnified view Ⓐ and move it. (Fig. 1-5-1)
3. Remove one screw, slide the cassette cover assy and remove it in direction of arrow ⓐ from cassette housing. Remove the cassette cover assy in direction of arrow ⓑ and release the connector on camera operation board. (Fig. 1-5-1)
4. Remove wires of the mode control motor as shown in the magnified view Ⓑ and connect jumping wires to the terminals. (Fig. 1-5-2)
5. Holding the cassette housing by hand, connect the jumping wires to battery and set the mechanism for unloading as it is in the Eject mode. In the condition, turn the take-up gear (see the magnified view Ⓒ) in the direction of the arrow ⓒ (toward the drum) to wind the tape. Checking up whether the tape is damaged or not, stop holding of the cassette housing by hand. (Fig. 1-5-2)

Note: *If the mechanism comes into the unloading mode as the cassette tape is not held by hand, it results in tape damage.*

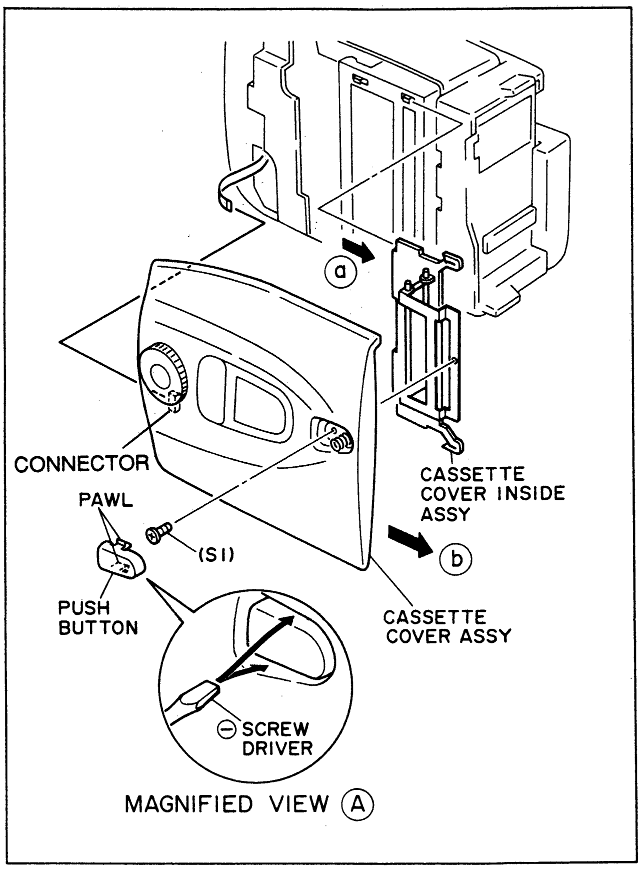
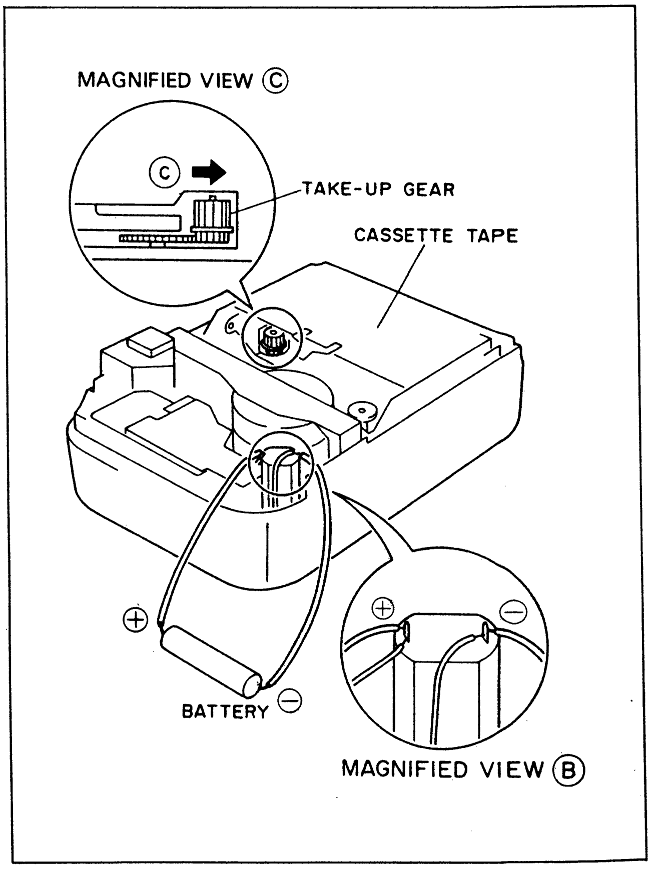

ⓐ
CONNECTOR
PAWL
(S1)
CASSETTE COVER INSIDE ASSY
ⓑ
PUSH BUTTON
CASSETTE COVER ASSY
⊖SCREW DRIVER
MAGNIFIED VIEW Ⓐ

Fig. 1-5-1


MAGNIFIED VIEW Ⓒ
ⓒ
TAKE-UP GEAR
CASSETTE TAPE
⊕
BATTERY ⊖
⊕
⊖
MAGNIFIED VIEW Ⓑ

Fiig. 1-5-2 CASSETTE TAPE

1.6 REPLACEMENT OF CCD IMAGE SENSOR

Notes:

- *Pay the most careful attention to the transparent glass and optical LPF of the CCD image sensor so a not the soil and damage them. If something is soiled with finger-prints, etc., gently clean it with silicon-processed paper/cloth or chamois.*
- *When the CCD image sensor is shipped from the factory, there are protection seals applied onto the transparent glass. Leave the protector as it is, and take it off just before assembling the CCD image sensor to the OP block.*

1.6.1 Removal of CCD image sensor

1. Remove two screws Ⓐ securing the CCD base, and disassemble the CCD spacer, the optical LPF, spacer rubber.

1.6.2 Installation of new CCD image sensor

1. Remove the protection seal from a new CCD image sensor. Next, put the spacer rubber, optical LPF, CCD spacer on the CCD image sensor as they are piled up in this order. At that time, make sure of orientation of each item refering to the following table (see Fig. 1-6-1).

Part Name	Orientation
CCD image sensor	Mark is on the right viewed as indicated by the arrow ⓐ.
Spacer rubber	IC side is horizontal.
Optical LPF	Marks are on the left and bottom viewed as indicated by the arrow ⓐ.

2. Fix the CCD base to OP block with the two screws Ⓐ. At that time, be careful of the orientation.
3. After completion of all P.C. boards to the camera section, observe the monitor to confirm no vignetting caused by the bodytube, rings, lens hood, etc. If no vignetting is observed, it can be said that image's parallel, horizontality and centering are correct.

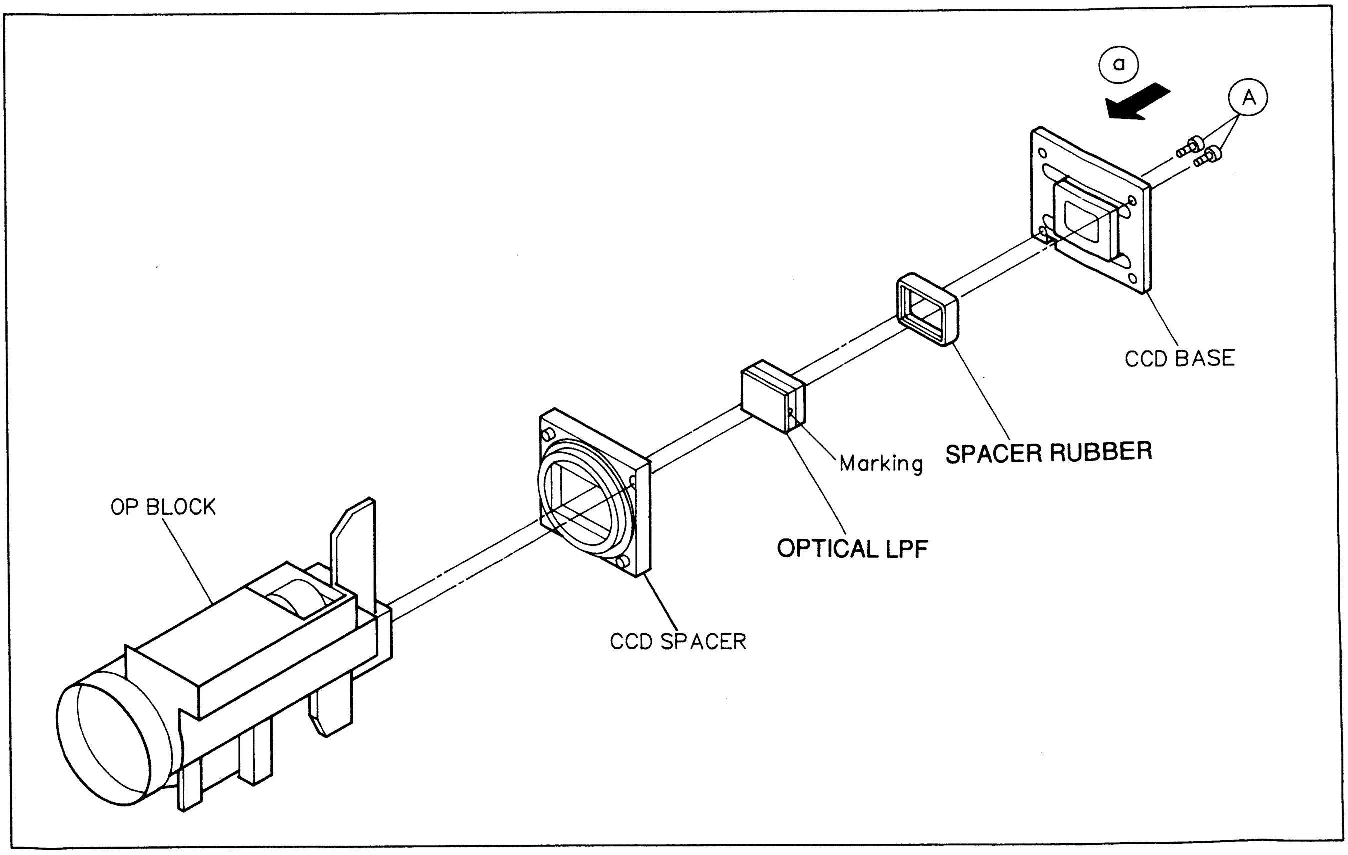


Fig. 1-6-1 CCD image sensor

1.7 EXTENSION CABLE CONNECTION (YTU93076A)

Connector	Pins	Connection	Part Number	Description
①	6	MAIN CN7 ↔ IR	YTU94077-6 YTU94074-6	
②	10	MAIN CN14 ↔ EVF MAIN CN7 ↔ CAMERA OPERATION	YTU94077-10 YTU94074-10	
③	11	MAIN CN8 ↔ A/C HEAD	YTU94077-11 YTU94074-11	
④	13	MAIN CN13 ↔ DECK OPERATION	YTU94077-13 YTU94074-13	
⑤	14	MAIN CN1 ↔ SENSOR	YTU94077-14 YTU94074-14	
⑥	18	MAIN CN16 ↔ REAR CN1 MAIN CN10 ↔ CAPSTAN MOTOR	YTU94077-18 YTU94074-18	
⑦	22	MAIN CN19 ↔ STEREO CN1 MAIN CN11 ↔ OP BLOCK MAIN CN15 ↔ REAR CN2	YTU94077-22 YTU94074-22	
⑧	28	MAIN CN12 ↔ CCD CN202	YTU94077-28 YTU94074-28	
⑨	4	CCD CN203 ↔ REAR CN3	YUJ40095A-4	

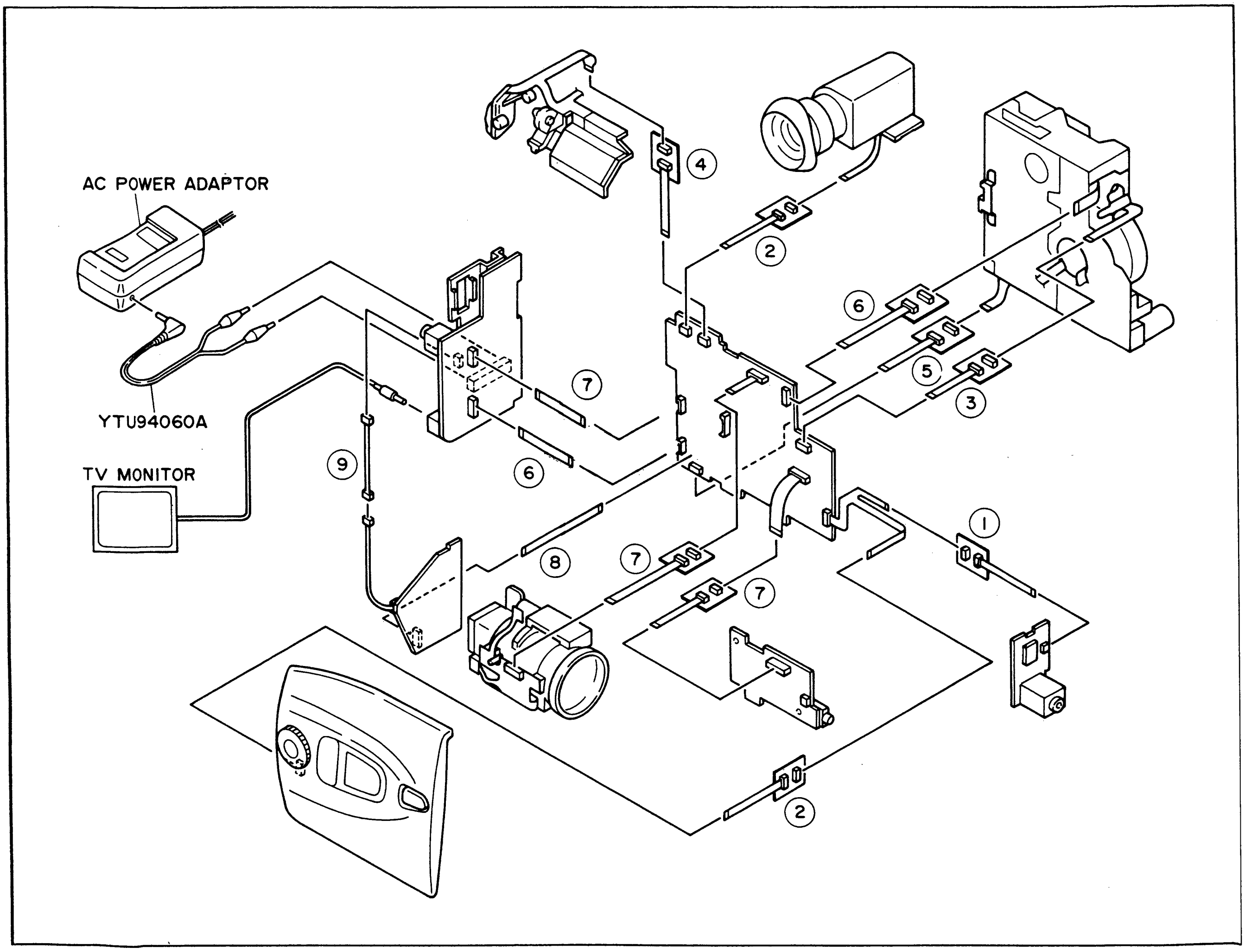


Fig. 1-7-1 EXTENSION CABLE CONNECTION

SECTION 2
MECHANISM ADJUSTMENT

2.1 SERVICE CAUTIONS

2.1.1 Precautions

1. Before disassembling/re-assembling the set as well as soldering parts, make sure to disconnect the power cable.
2. When disconnecting/connecting connectors, pay enough attention to wiring not to damage it.
3. When installing parts, be careful not to do with other parts as well as not to damage others. (Pay the most careful attention to the upper drum assy and tape transport mechanism.)

2.1.2 How to read the disassembly and assembly (For Mechanism Parts)

① : Order of steps in Procedure
When reassembling, perform the step(s) in the reverse order. These numbers are also used as the identification (location) No. of parts Figures.

② : Part to be removed or installed.

③ : Location of part.
T = Top
B = Bottom

④ : Fig. No. showing Procedure or Part Location.
M = Mechanism

⑤ : Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or unsoldered.
P = Spring
W = Washer
S = Screw
* = Unhook, unlock, release, unplug or unsolder.

⑥ : Adjustment information for installation.
(+) = Refer to Exploded Views for Lubrication information.

2.1.3 Main screws and washers to deal with disassembly/assembly

Table 2-1-1 lists screws and washers by their symbols which correspond to those shown in figures of this section "Disassemby and Assembly".

SYMBOL OF WASHER	SHAPE	PART NUMBER
S1		SPSH1730M
S2		SPSH1740Z
S3		YQ43816
S4		SSSH1730M
S5		SPSH1740M
S6		SPSH1720M

SYMBOL OF WASHER	SHAPE	PART NUMBER
W1		PQM30017-27
W2		Q03093-835
W3		PQM30017-25

Table 2-1-1

(For Mechanism Parts)

STEP/LOC. No.	PART		Fig. No.	REMOVAL	INSTALLATION
				*UNHOOK/UNLOCK /RELEASE/UNPLUG /UNSOLDER	ADJUSTMENT CONDITION NOTE
①	REEL DISK (SUP)	T	M1	(W1), (W2)	–
②	IMP. ROLLER ASSY	T	M1	(S1)	–
③	TENSION ARM ASSY	T	M1	(W1)	–
④	SLANT ARM ASSY	T	M1	(W1)	–
⑤	CANCEL LEVER ASSY	T	M2	(W1)	–
⑥	EJECT LEVER ASSY	T	M2	(W2)	–
⑦	CASSETTE BLOCK	T	M2	(S13)	–

↑ ① ↑ ② ↑ ③ ↑ ④ ↑ ⑤ ↑ ⑥

2.2 DISASSEMBLY/ASSEMBLY OF MECHANISM PARTS

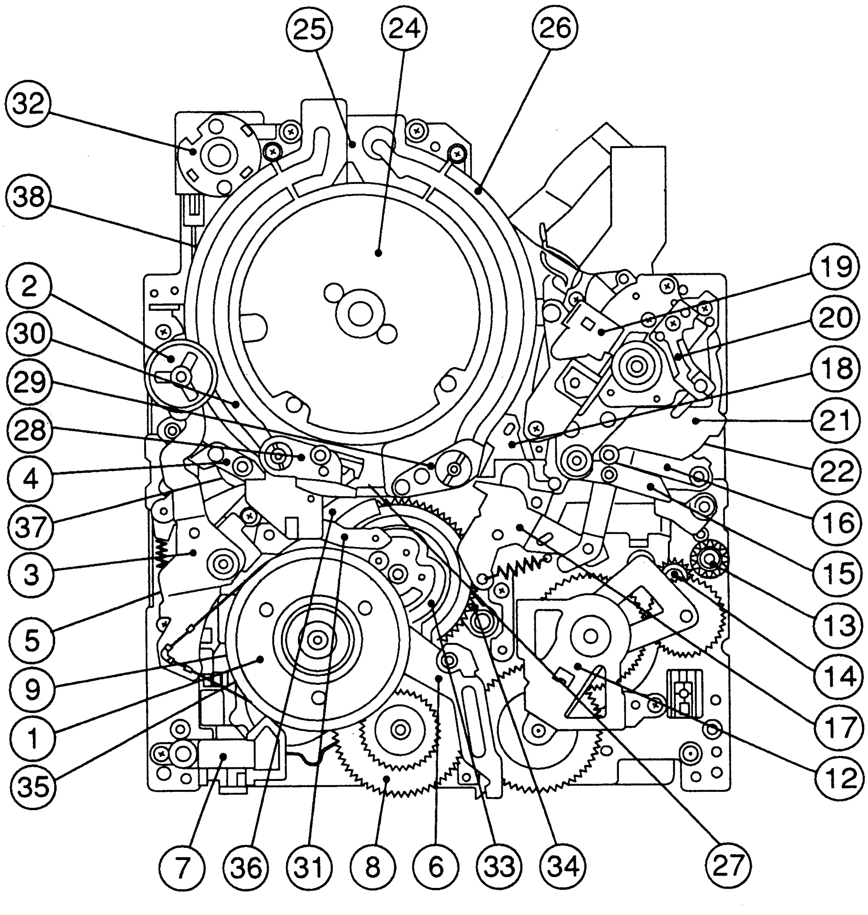
This procedure starts with the condition that the cabinet parts and deck parts. Also, all the following procedures for adjustment and parts replacement should be performed in STOP mode. When reassembling, perform the step(s) in the reverse order.

STEP/LOC. No.	PART		Fig. No.	REMOVAL	INSTALLATION
				*UNHOOK/UNLOCK /RELEASE/UNPLUG /UNSOLDER	ADJUSTMENT CONDITION NOTE
①	REEL DISK (SUP)	T	M1	(W1), (W2)	-
②	IMP. ROLLER ASSY	T	M1	(S1)	-
③	TENSION ARM ASSY	T	M1	(W1), (P1)	-
④	SLANT ARM ASSY	T	M1	(W1), (P2)	-
⑤	CANCEL LEVER ASSY	T	M2	(W1)	-
⑥	EJECT LEVER ASSY	T	M2	(W1)	-
⑦	CASSETTE GUIDE (L) ASSY	T	M2	(S2)	-
⑧	SUPPLY CLUTCH ASSY	T	M2	(W1)	-
⑨	WHEEL GEAR	T	M2	(W1)	See, Adjustment procedure for Section 2.4
⑩	SENS BOARD ASSY	B	M3	4(S1)	-
⑪	TIMING BELT	B	M3		-
⑫	CENTRE PULLEY UNIT	T/B	M3	2(S1)	-
⑬	TU GEAR	T	M3	(W1)	-
⑭	BRAKE SUB GEAR	T	M3	(W1)	-
⑮	P.R ARM ASSY	T	M3	(W3)	-
⑯	TU GUIDE ARM ASSY	T	M3	(W1)	-
⑰	LINK ARM ASSY	T	M4	(W3)	-
⑱	LED GUIDE	T	M4	(S1)	-
⑲	A/C HEAD UNIT	T	M4	2(S3)	-
⑳	SLANT POLE BASE ASSY	T	M5	(S3)	-
㉑	CAP MOTOR ASSY	T	M5	3(S3)	-
㉒	MOTOR BASE	T	M5	2(S2), (S4)	-
㉓	BRUSH	B	M6	(S1)	-
㉔	DRUM FINAL	T/B	M6	2(S2)	-
㉕	CATCHER	T	M6	2(S2)	-
㉖	GUIDE RAIL	T	M6	8(S1)	-
㉗	DRUM SPACER	T	M6	2(S2)	-
㉘	POLE BASE (SUP)	T	M6	-	-
㉙	POLE BASE (TU)	T	M6	-	-
㉚	COVER PLATE	T	M7	-	-
㉛	DRIVE LEVER ASSY	T	M7	-	-
㉜	MOTOR BRACKET ASSY	T	M7	3(S2)	-
㉝	CONTROL CAM	T	M8	(W3)	See, Adjustment procedure for Section 2.4
㉞	LINK LEVER ASSY	T	M8	-	-
㉟	MIDDLE GEAR	T	M8	-	-
㊱	LOADING GEAR(T) ASSY	T	M8	(W1)	See, Adjustment procedure for Section 2.4
㊲	LOADING GEAR(S) ASSY	T	M8	(W1)	-
㊳	LOADIDNG RING ASSY	T	M8	4(S2)	See, Adjustment procedure for Section 2.4

List of Abbreviations:

4(S1)	= 4 Screws (S1)	3(K1)	= 3 Positioning pins (K1)
3(L1)	= 3 Locking Tabs (L1)	2(P1)	= 2 Springs (P1)
3(SD1)	= 3 Solder position (SD1)	2(W1)	= 2 Washers (W1)

TOP VIEW


㉕
㉔
㉖
㉜
㊳
②
㉚
㉙
㉘
④
㊲
③
⑤
⑨
①
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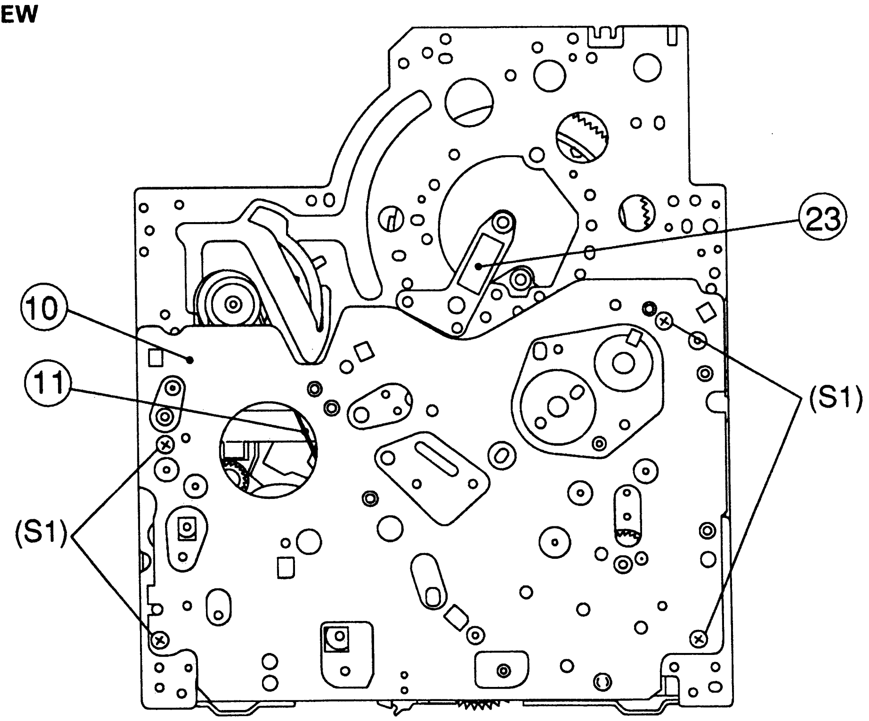
⑬
⑭
⑰
⑫
⑦
㊱
㉛
⑧
⑥
㉝
㉞
㉗

BOTTOM VIEW



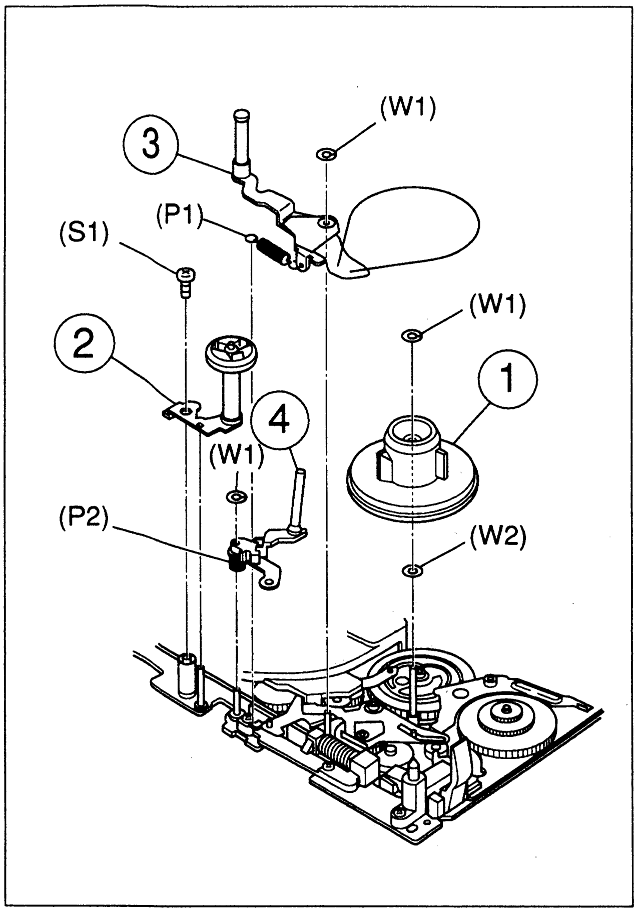

3
(W1)
(P1)
(S1)
(W1)
2
1
4
(W1)
(P2)
(W2)

Fig. M1

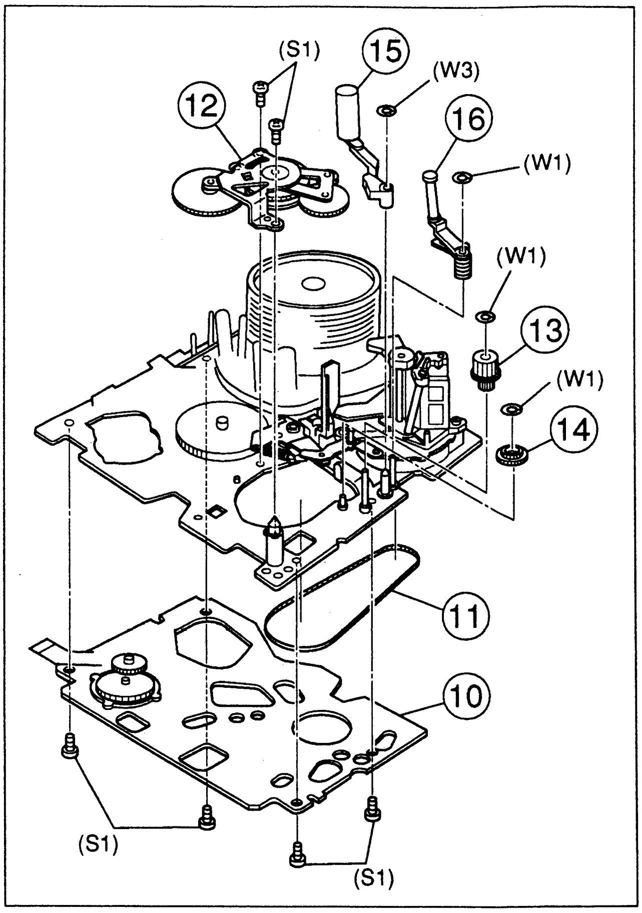

(S1)
15
(W3)
12
16
(W1)
(W1)
13
(W1)
14
11
10
(S1)
(S1)

Fig. M3

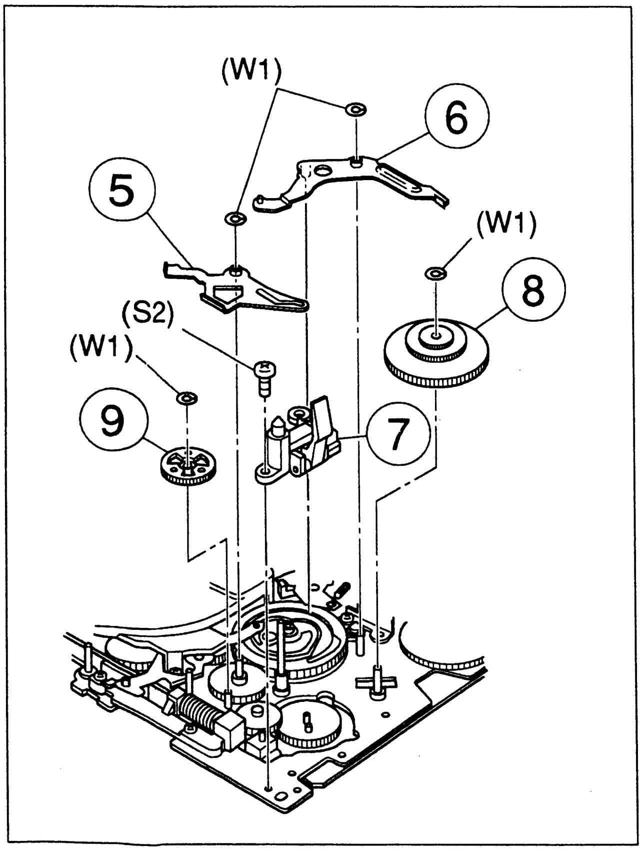

(W1)
6
5
(W1)
(S2)
(W1)
8
9
7

Fig. M2

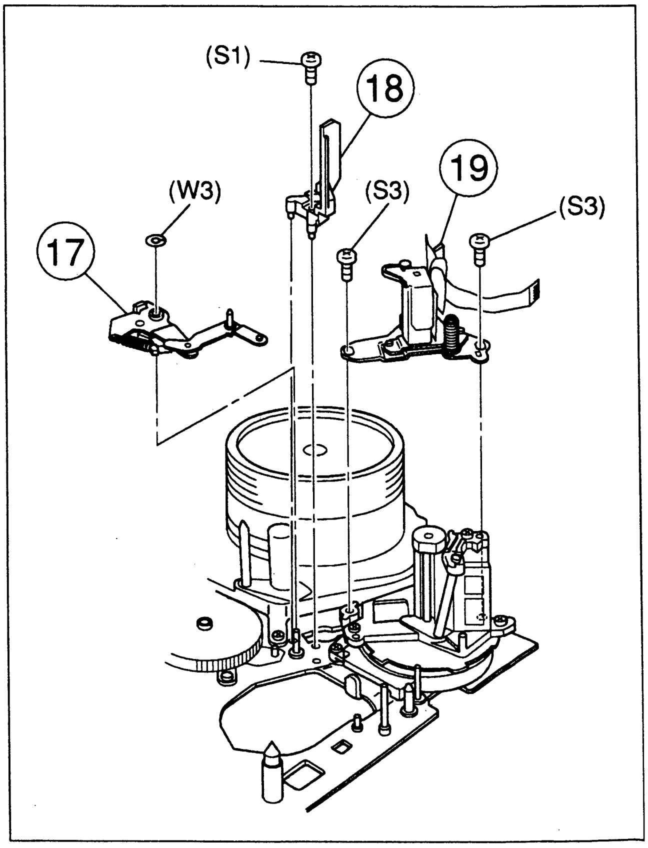

(S1)
18
19
(W3)
(S3)
(S3)
17

Fig. M4

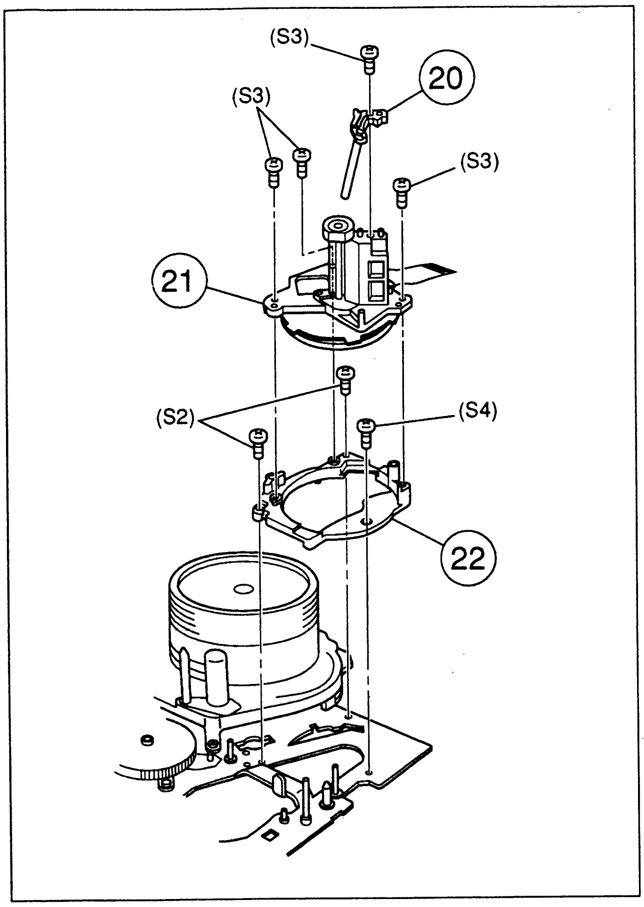

(S3)
20
(S3)
(S3)
21
(S2)
(S4)
22

Fig. M5

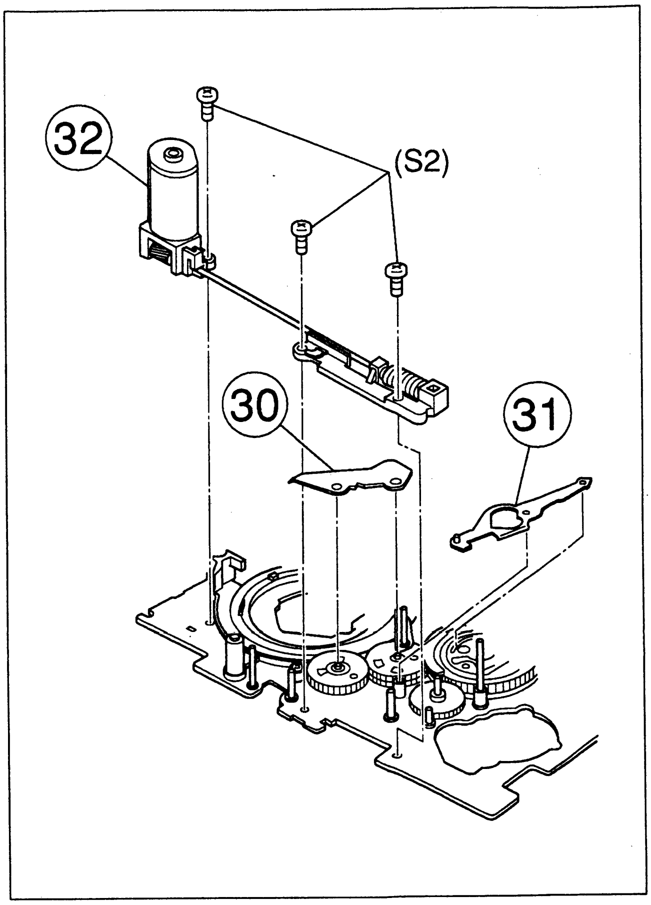


Fig. M6

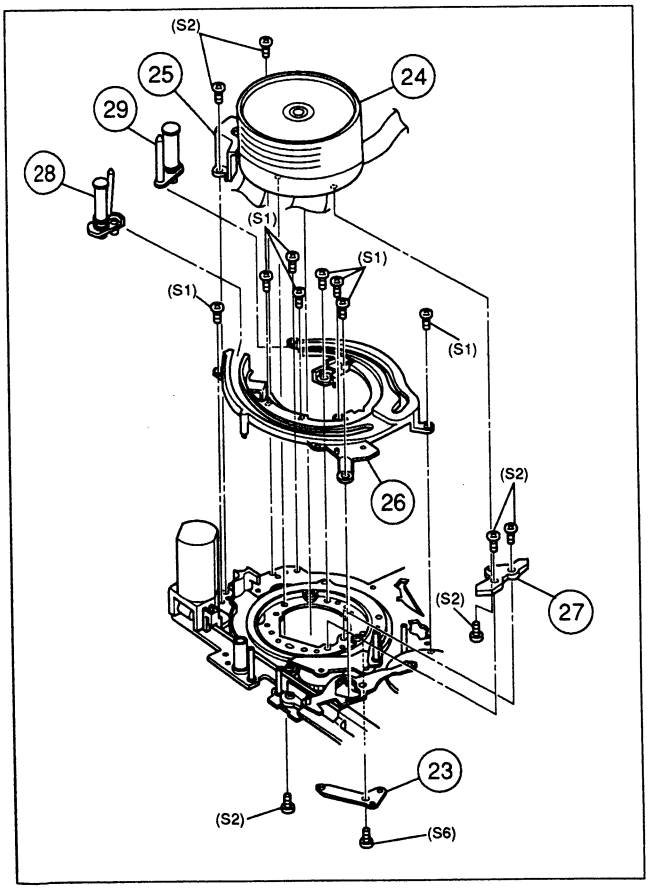

(S2)
25
24
29
28
(S1)
(S1)
(S1)
(S1)
26
(S2)
(S2)
27
23
(S2)
(S6)

Fig. M5A

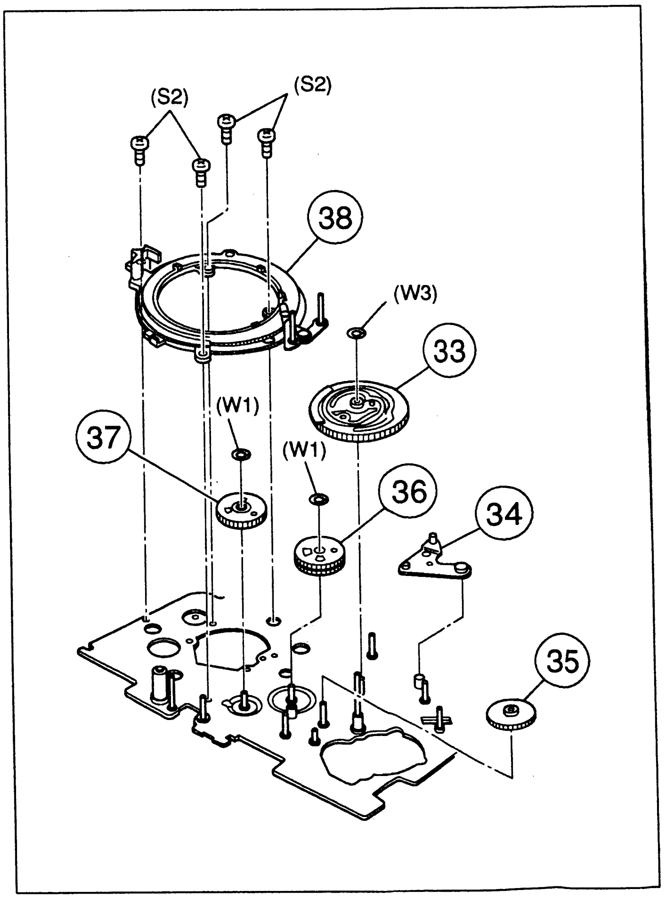

(S2)
(S2)
38
(W3)
33
37
(W1)
(W1)
36
34
35

Fig. M7

2.3 REPLACEMENT OF UPPER DRUM

Note: *Be very careful not to touch any hand of a new upper drum as well as not to damage the drum.*

2.3.1 Removal of upper drum

1. Carefully unsolder at 10 points shown in Fig. 2-3-1 on the UPPER DRUM board.

   Note: *If solder is not completely removed, it may cause damage of the head pins when the upper drum is removed.*

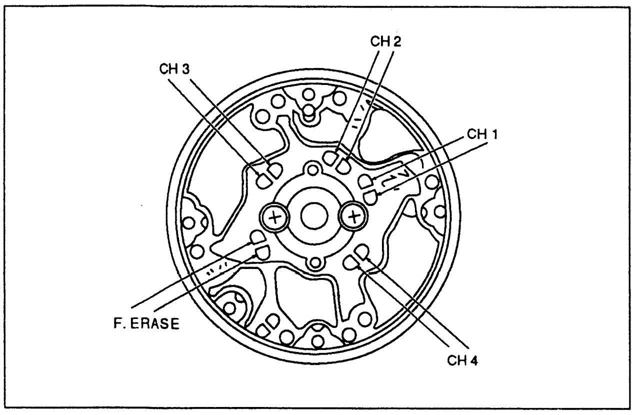


Fig. 2-3-1 Upper drum replacement (1)

2. Remove two screws and draw out the upper drum in the direction of the arrow.

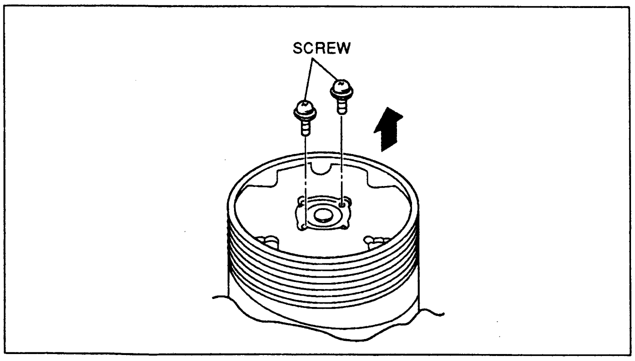


Fig. 2-3-2 Upper drum replacement (2)

3. When it is hard to remove the upper drum, set the upper drum removal tool (YTU94031A) with the screws which are once removed in the step 2, and tighten the center screw to remove it easily.

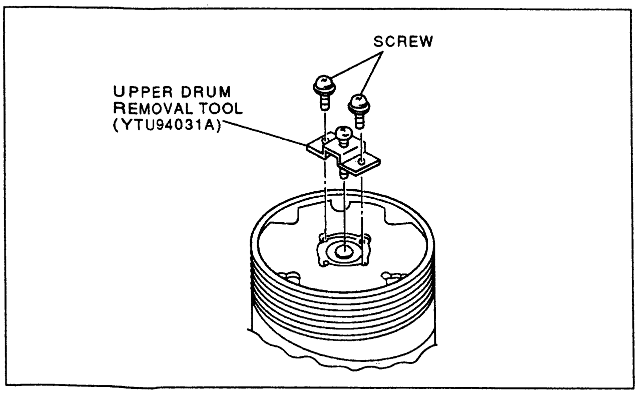


Fig. 2-3-3 Upper drum replacement (3)

2.3.2 Installation of new upper drum

1. Before installing a new upper drum, insert a soldering iron (50 W) into the hole of the upper drum and heat it for about 3 to 5 minutes to expand it.

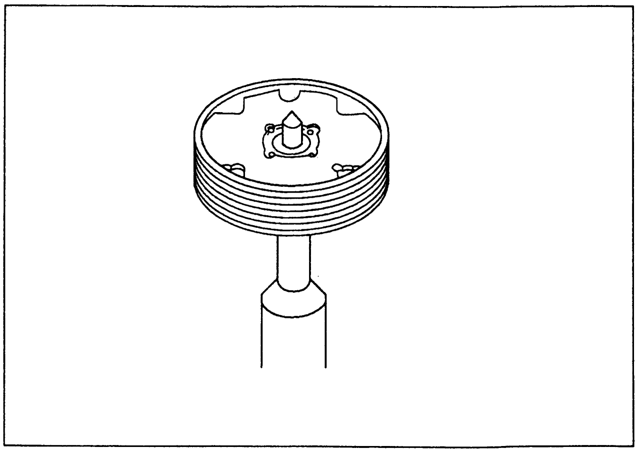


Fig. 2-3-4 Upper drum replacement (4)

2. Install the new upper drum so that its arrow marking is positioned at an angle of 140° to the rotary transformer's mold (having no relay pin) of the lower drum.

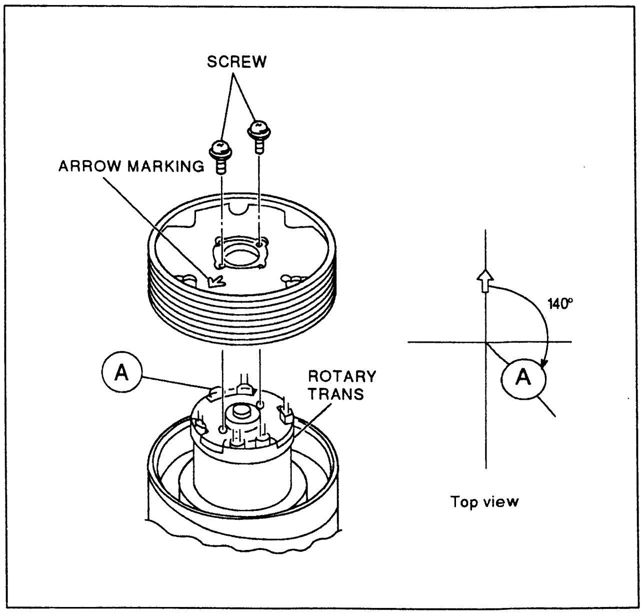
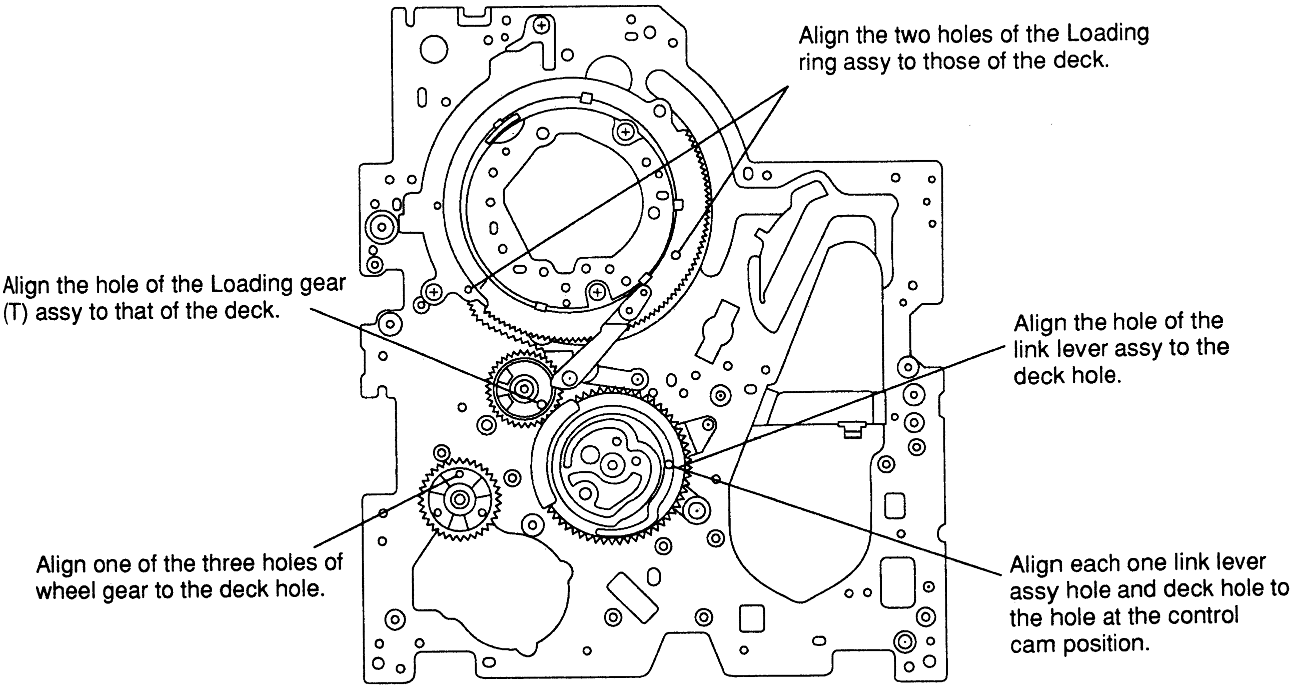


Fig. 2-3-5 Upper drum replacement (5)

3. Tighten the screws lightly first, then, alternately tighten them gradually as the upper drum is cooled.
4. After replacement finishes, make sure to check up and deck section adjust.

2.4 CHECKUP AND ADJUSTMENT OF MECHANISM PHASE

Note: *Pay careful attention to the installing order and phase of mechanism parts of the loading system.*



Align the two holes of the Loading ring assy to those of the deck.

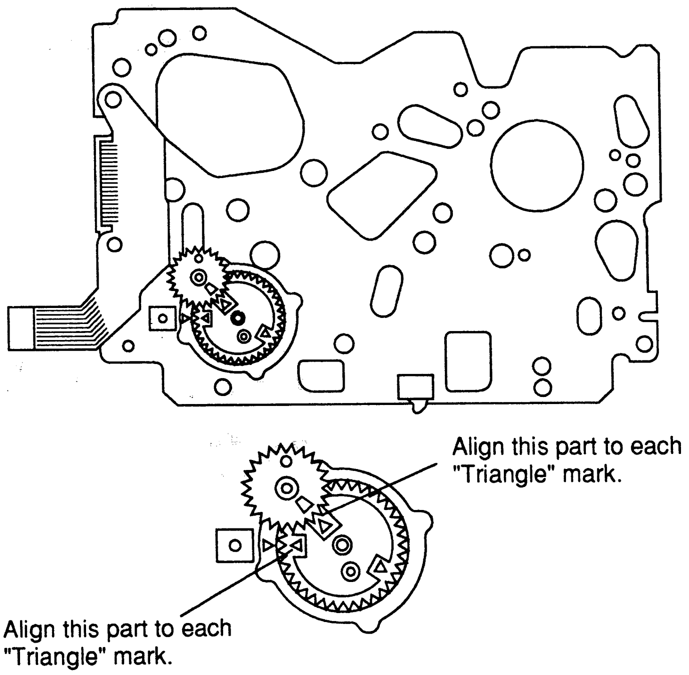
Align the hole of the Loading gear (T) assy to that of the deck.

Align the hole of the link lever assy to the deck hole.

Align one of the three holes of wheel gear to the deck hole.

Align each one link lever assy hole and deck hole to the hole at the control cam position.

Fig. 2-4-1 TOP OF MAIN DECK



Align this part to each "Triangle" mark.

Align this part to each "Triangle" mark.

Fig. 2-4-2 SENSOR BOARD

2.5 TAPE TRANSPORT ADJUSTMENT

In most cases the deck section is in need electrical adjustment, it results from replacement of worm mechanical parts or video heads. In the event of malfunction with electrical circuits, troubleshouting with the aid of proper test instruments most be done first, and then commence necessary repair, replacement and adjustment, etc.

2.5.1 Required adjustment tools

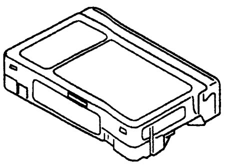
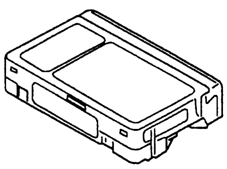
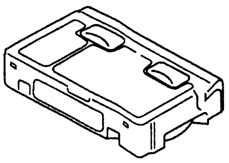
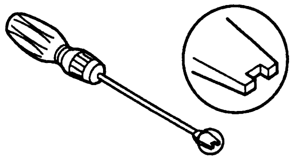
Alignment tape for SP interchangeability (MHPE-C)	Alignment tape for LP interchangeability (MHPE-LC)
	
Cassette torque meter PUJ50431-2	Roller driver PTU94002
	

Table 2-5-1

2.5.2 Back tension

1. Set a cassette torque meter onto the deck and measure the back tension in standard REC mode to confirm that the back tension is 13 – 20 gr-cm.
2. If not, replace the tension band. When the value widely fluctuates in the measurement, replace the supply reel disk.
3. With the cassette torque meter, confirm that the play torque is 15 – 25 gr-cm. If necessary, replace the center pully unit..

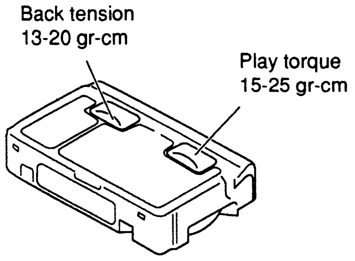


Fig. 2-5-1 Cassette torque meter

2.5.3 Tape pattern

1. Observe signal at pin 2 of CN20 (V. TP FM) with external trigger from pin 5 of CN20 (V. H. FF) on the MAIN board.
2. Play back the SP stairstep signal of the alignment tape, and maximize the FM waveform by the tracking button.
3. Set the tracking control to the centre position by simultaneously pressing the tracking (–) and (+) buttons and maximize the FM waveform by the tracking button.
4. If the observed FM waveform is not flat, adjust the height of the supply of take-up guide roller with the roller driver (PTU94002).

   Note: *To prevent the tape from damage, turn the guide rollers slowly.*

5. By operating the tracking button (both in + and – directions) in the manual tracking mode, vary the output level of the FM waveform from maximum to minimum and vice versa to confirm that the waveform varies nearly in a flat shape.
6. When the FM waveform breaks in the level varying process, subtly adjust the height of guide rollers at every breaking point so that the waveform varies as flat as possible.
   Repeat the above steps 5. and 6. several times to confirm that the waveform is flat as a whole.
7. Play the LP stair step signal of alignment tape and adjust the tracking control to maximize the FM waveform, confirm that FM waveform variation is always flat.
8. Record the signal and play it back in both of the SP and LP mode, and confirm that the FM waveform is flat in both modes.

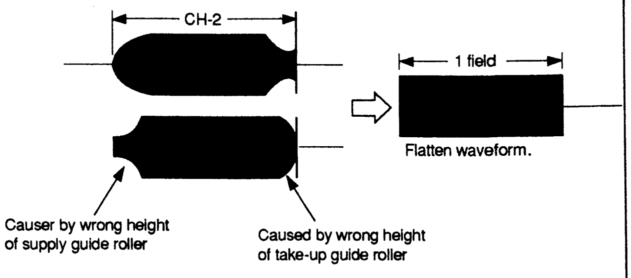

CH-2
1 field
Flatten waveform.
Causer by wrong height of supply guide roller
Caused by wrong height of take-up guide roller

Fig. 2-5-2 FM waveform-1

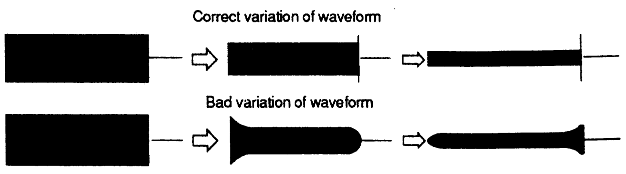


Fig. 2-5-3 FM waveform-2

9. Through the above steps, confirm that there occur no wrinkling and damage in the tape around the pinch roller and TU guide pole whenever the deck is in operation of Loading/Unloading, Search Rewind and at mode change from Search Rewind to play mode. If wrinkling or damage in the tape occurs around the TU guide pole, adjust the angle (slant) of the A/C head to the tape. So that the tape normally runs along the lower flange of the guide pole.

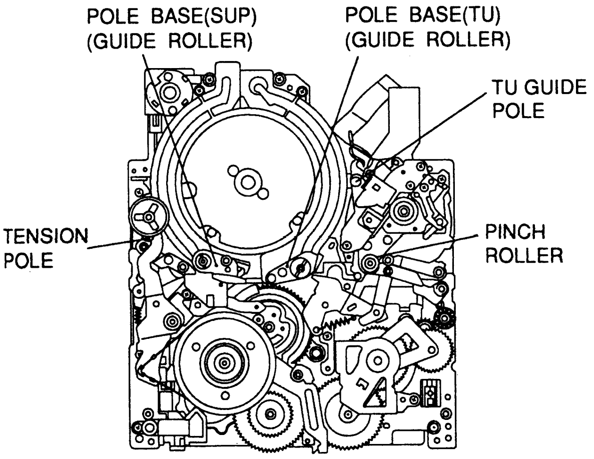

POLE BASE(SUP)
(GUIDE ROLLER)
POLE BASE(TU)
(GUIDE ROLLER)
TU GUIDE
POLE
TENSION
POLE
PINCH
ROLLER

Fig. 2-5-4 Tape transport system

2.5.4 A/CTL head height & azimuth

1. Play back the SP 6 kHz segment of the alignment tape and observe waveform at AUDIO OUT.
2. Turn the screw Ⓐ, Ⓑ (tilt) and Ⓒ (azimuth) gradually (at an angle of 45° approx.) in the same direction to obtain the maximum output level.
3. As final fine adjustment, adjust the screw Ⓑ for minimum level fluctuation and the screw Ⓒ for maximum output level.

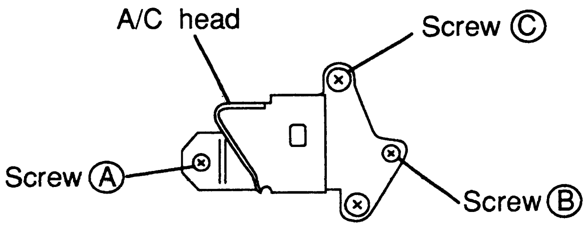

A/C head
Screw Ⓒ
Screw Ⓐ
Screw Ⓑ

Fig. 2-5-5 A/C head

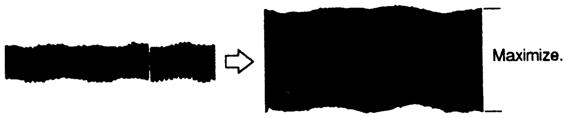


Fig. 2-5-6 Audio signal

2.5.5 Phase of control head (X value)

1. Play back the SP stairstep signal of the alignment tape and observe signal at pin 2 of CN20 (V.TP FM) with external trigger from pin 5 of CN20 (V.H.FF) on the MAIN board.
2. Operate the tracking button in the centre and manual tracking mode by pressing the tracking (+) and (–) buttons and confirm that the FM output level is maximum at the centre position as shown in Fig. 2-5-8.
3. If necessary, slightly loosen the setscrews Ⓓ and Ⓔ and insert the Tweezers into the notch and guide hole to move the A/C head fully in the direction of the capstan to the extent.
4. Gradually move the A/C head toward the drum to find the position where the FM output level maximum for the first time (a' – b' in Fig. 2-5-8).
5. Fine adjust the phase of the A/C head and tighten the screws Ⓓ and Ⓔ at the point a.
6. Play back the LP stairstep signal of the alignment tape (MHPE-LC) and confirm that the FM waveform is maximized at the centre detent position of the tracking button.
7. Confirm that the above steps 2. and 6. are satisfactory at the same time.
   If not, repeat the steps 3. through 6..

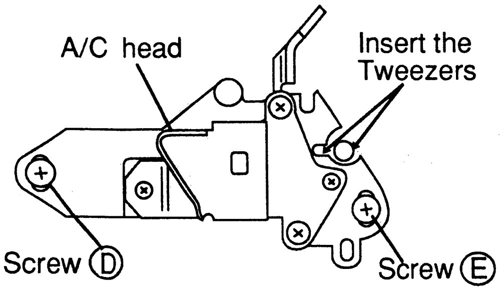


Fig. 2-5-7 Phase of control head

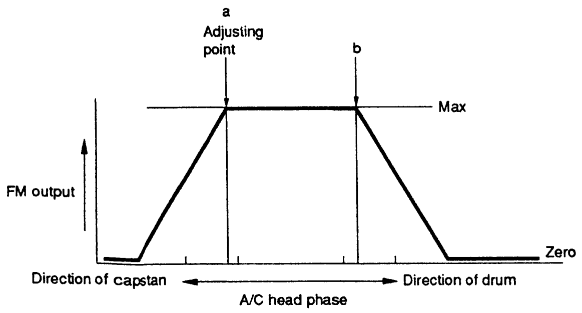


Fig. 2-5-8 Phase adjustment point of control head

2.6 REMARKS

2.6.1 Cleaning

1. For cleaning of the upper drum (particularly video heads), use fine-woven cotton cloth or Kimwipe with alcohol soaks through. Do not move the cloth but turn the upper drum counterclockwise.

   Note: *Make sure not to move the cloth in the vertical direction to the video head, since it may cause damage of the video heads.*

2. For cleaning of parts of the tape transport system except the upper drum, use fine-woven cotton cloth or cotton swab soaked alcohol.
3. After cleaning, confirm that the cleaned parts are completely dry before loading the deck with cassette tape.

2.6.2 Applying oil and grease

1. Periodical oiling and greasing are not required but should be done to new parts when replacing. If oil and grease on the other parts of the other party are old and dirty, wipe them clean and apply new oil or grease.
2. For parts and points to apply oil and grease, refer to the exploded view of the mechanism assembly (M3).
   Table 2-6-1 specifies oil and grease to be used.
3. When oiling, clean the objective parts with alcohol first and apply one or two drop(s) of oil. Too much oiling causes rotary parts to slip because of oil leakage.

Classification	Name	Part No.	Symbol in drawing
Grease	Grease	KYODO-SH-P	AA
Oil	Cosmo Hydro HV100	YTU94027	BB

Table 2-6-1 Specific oil and grease to be used

2.6.3 Checkup

After replacement of the supply reel disk and tension band, make sure to inspect beck tension according to the adjustment procedure of MECHANISM ADJUSTMENT section.

SECTION 3
ELECTRICAL ADJUSTMENT

3.1 ELECTRICAL ADJSUTMENT

3.1.1 PREPARATION

1. Precaution

This model does not contain adjustment controls (VR) . General deck system and camra system adjustment are not required. However, if MAIN board need replacement, please use original E²PROM on to new board. Then adjustment are not required. And if parts such as the following need replacement, special computerized adjustment are required (Refer to sec. 3.1.1-5). Please contact to JVC service for detaile information.

- OP block
- E²PROM (IC903 of MAIN board)

In the event of malfunction with electrical circuits, trouble-shooting with the aid of proper test instruments most be done first, and then commence necessary repair, replacement and adjustment, etc.

1. In case of wiring to chip test points for measurement, use IC clips, etc. to avoid any stress.
2. Since connectors are fragile, carefully handle them in disconnecting and connecting.
3. Shortcircuit between opration unit and DECK chassis.

2. Required test equipment

1. Colour TV monitor.
2. AC power adapter (AA-V10 and AA-V6 or equivalent).
3. Oscilloscope (Dual-trace type, for more than 20 MHz).
4. Digital voltmeter
5. Personal computer

3. Required adjustment tools

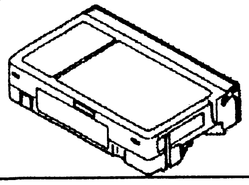
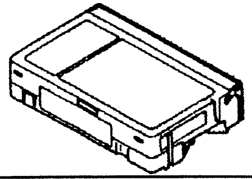
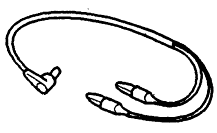
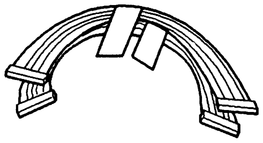
Alignment tape for SP interchangeabillty (MHPE-C)	Alignment tape for N. SP PB Y/C level (MHVE-2C)
	
Power cord YTU94060A	Patch cord set YTU93076A
	

Table 3-1-1 Required adjustment tools

4. Setup for E. VF section adjustment

1. Referring to 'sec. 1. DISASSEMBLE' and connect the COLOUR VF connector CN101 of the PBL board to CN14 of the MAIN board of deck section (for GR-HF900E).
2. Referring to 'sec. 1. DISASSEMBLE' and connect the E. VF connector CN1 of the E. VF board to CN14 of the MAIN board of deck section (for GR-HF700E).

5. Required adjustment tools for Service support system

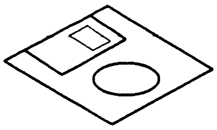
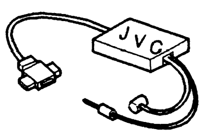
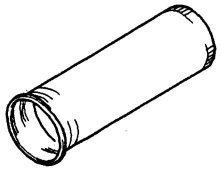
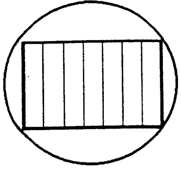
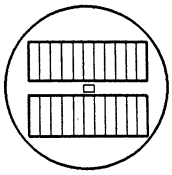
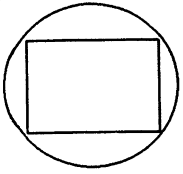
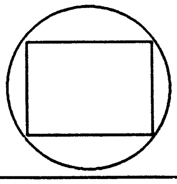
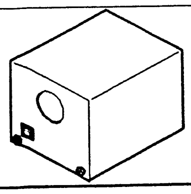
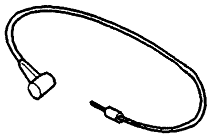
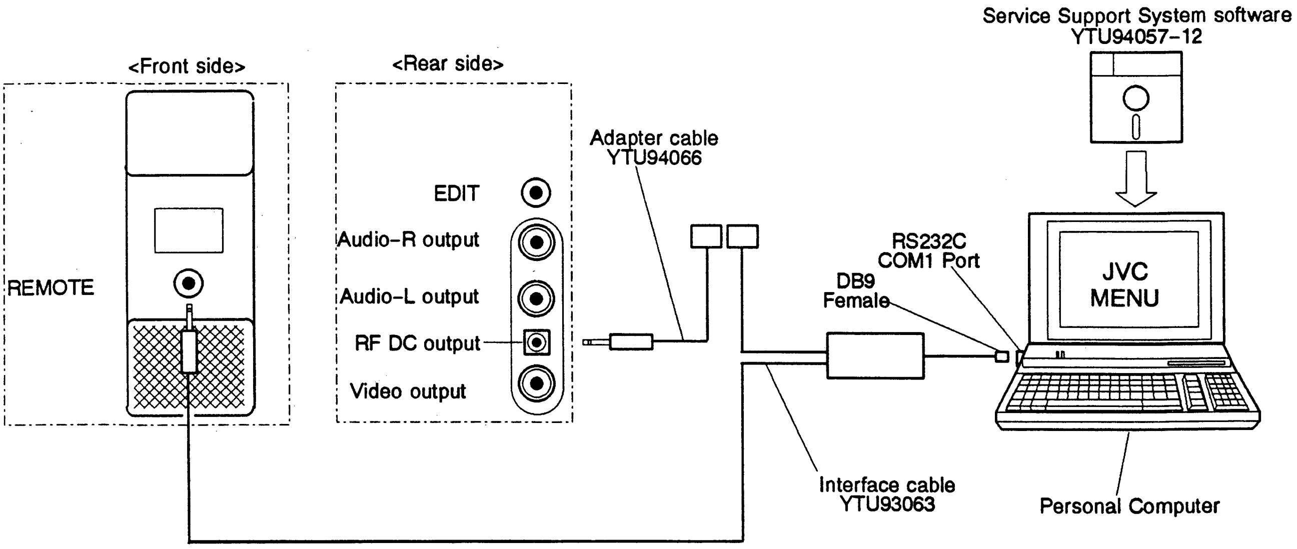
Service Support System software YTU94057-12	Interface cable YTU93063
	
Infinity adjustment lens YTU92001B	Colour bar chart YTU92001-051
	
Gray scale chart YTU92001-052	White balance chart YTU92001-053
	
Skintone chart YTU92001-054	Light box YTU93072
	
Adapter cable YTU94066	
	

Table 3-1-2 Required adjustment tools for Service support system

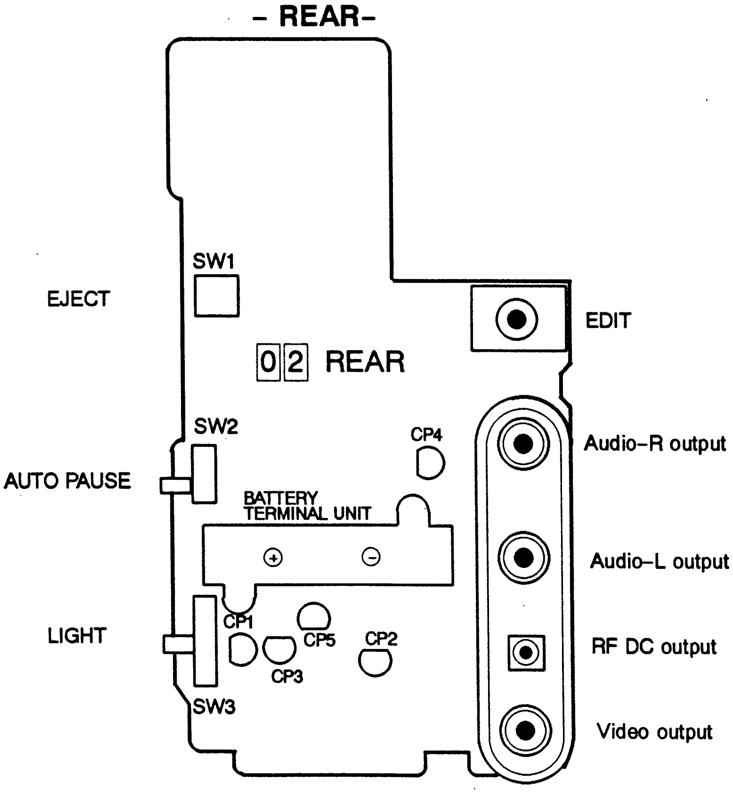
6. Connections for Service support system



Service Support System software
YTU94057-12
<Front side>
<Rear side>
REMOTE
EDIT
Audio-R output
Audio-L output
RF DC output
Video output
Adapter cable
YTU94066
RS232C
COM1 Port
DB9
Female
JVC
MENU
Interface cable
YTU93063
Personal Computer

Fig. 3-1-1 Connections for Service support system

■ CIRCUIT PROTECTOR AND BATTERY TERMINAL LOCATION FOR REAR BOARD

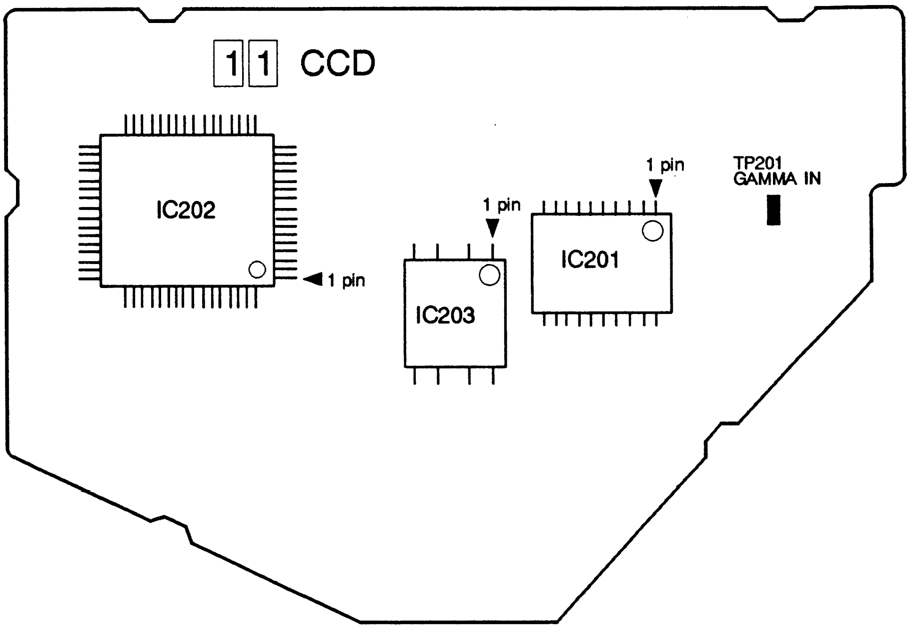


- REAR-
SW1
EJECT
02 REAR
EDIT
SW2
CP4
AUTO PAUSE
BATTERY
TERMINAL UNIT
⊕
⊖
Audio-R output
Audio-L output
LIGHT
CP1
CP5
CP2
CP3
SW3
RF DC output
Video output

Fig. 3-1-2 Circuit protector and battery terminal location for REAR board assembly

■ ADJUSTMENT ELEMENT LOCATION FOR CAMERA SECTION

- CCD-

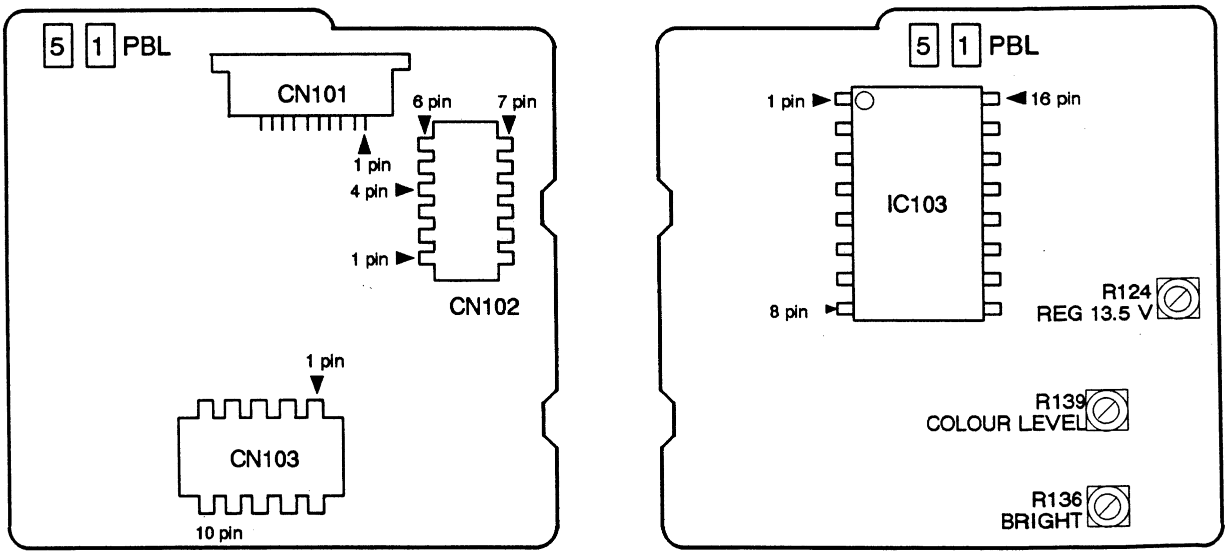


1 1 CCD
IC202
1 pin
IC203
1 pin
IC201
1 pin
TP201
GAMMA IN

Fig. 3-1-3 Adjustment element location for CCD board assembly

■ ADJUSTMENT ELEMENT LOCATION FOR COLOUR VIEWFINDER SECTION

— PBL —



5 1 PBL
CN101
6 pin
7 pin
1 pin
4 pin
1 pin
CN102
1 pin
CN103
10 pin
5 1 PBL
1 pin
16 pin
IC103
8 pin
R124
REG 13.5 V
R139
COLOUR LEVEL
R136
BRIGHT

Fig. 3-2-1 Adjustment element location for PBL board assembly

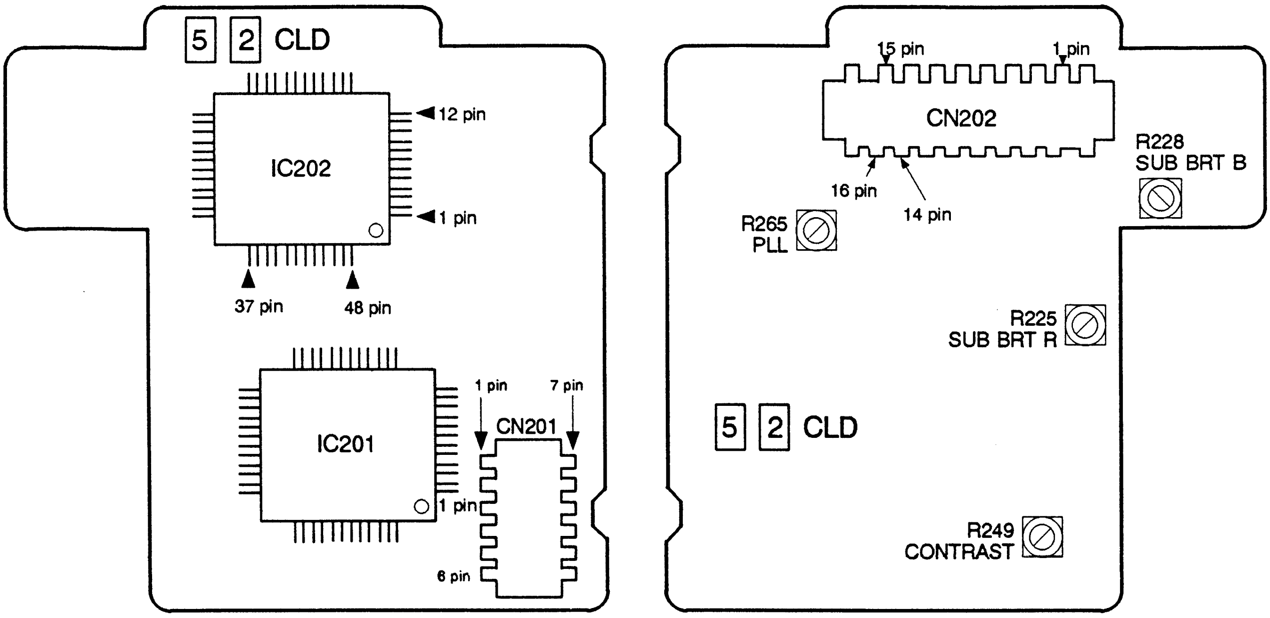

5 2 CLD
IC202
12 pin
1 pin
37 pin
48 pin
IC201
1 pin
7 pin
CN201
1 pin
6 pin
15 pin
1 pin
CN202
16 pin
14 pin
R228
SUB BRT B
R265
PLL
R225
SUB BRT R
5 2 CLD
R249
CONTRAST

Fig. 3-2-2 Adjustment element location for CLD board assembly

3.2 COLOUR VIEWFINDER SECTION ADJUSTMENT (For GR-HF900E)

Notes: *Unless otherwise specified, all measurement points and adjustment parts are located on CLD board.*

3.2.1 REG 13.5 V

Subject	•–
Mode	•EE
Equipment	•Digital voltmeter
Measurement point	•CN102 pin 4 〔PBL board〕
Adjustment part	•R124 (REG 13.5 V) 〔PBL board〕
Specification	•13.5 ± 0.1 V DC

1) Connect a digital voltmeter to pin 4 of the CN102.
2) Adjust R124 for 13.5 V DC.

3.2.2 PLL

Subject	•–
Mode	•EE
Equipment	•Oscilloscope
Measurement point	•IC202 pin 37
Adjustment part	•R265 (PLL)
Specification	•"A" = 2.6 ± 0.1 V DC

1) Observe waveform at pin 37 of the IC202.
2) Adjust R265 so that DC level of "A" (between the waveform center and GND, see Fig. 3-2-3) of a waveform becomes 2.6 V DC.

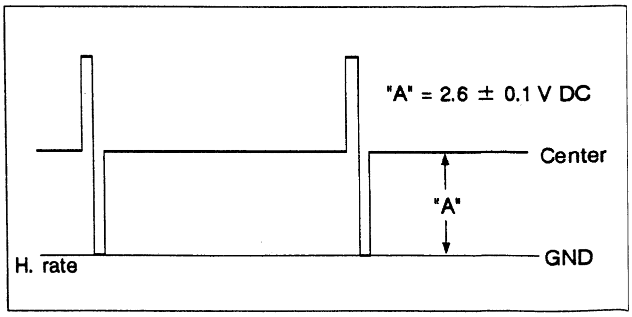

"A" = 2.6 ± 0.1 V DC
Center
"A"
H. rate
GND

Fig. 3-2-3 PLL

3.2.3 Brightness

Subject	•Alignment tape [MHPE-C] •Stairstep
Mode	•PB
Equipment	•Oscilloscope
Measurement point	•CN202 pin 14 (G OUT)
Adjustment part	•R136 (BRIGHT) [PBL board]
Specification	•"A" = 8.0 ± 0.1 Vp-p

1) Observe waveform at pin 14 of CN202.
2) Adjust R136 so that level of "A" (see Fig. 3-2-4) of a waveform becomes 8.0 Vp-p.

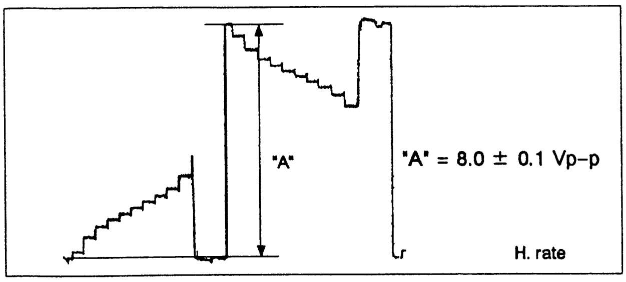


Fig. 3-2-4 Brightness

3.2.4 Contrast

Subject	•Alignment tape [MHPE-C] •Stairstep
Mode	•PB
Equipment	•Oscilloscope
Measurement point	•CN202 pin 14 (G OUT)
Adjustment part	•R249 (CONTRAST)
Specification	•"A" = 2.3 ± 0.1 Vp-p

1) Observe waveform at pin 14 of CN202.
2) Adjust R249 so that level of "A" (see Fig. 3-2-5) of a waveform becomes 2.3 Vp-p.

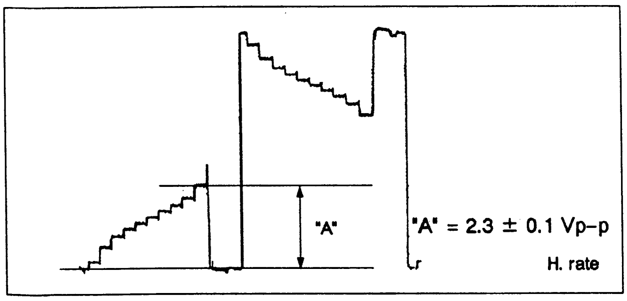


Fig. 3-2-5 Contrast

3.2.5 White balance-1

Subject	•Alignment tape [MHPE-C] •Stairstep
Mode	•PB
Equipment	•Oscilloscope
Measurement point	•CN202 pin 14 (G OUT) •CN202 pin 13 (R OUT)
Adjustment part	•R225 (SUB BRT R)
Specification	•Equall level "A" ± 0.1 Vp-p

1) Connect the oscilloscope to pin 14 of CN202.
2) Observe waveform and make a note of the level as "A" (see Fig. 3-2-6).
3) Connect the oscilloscope to pin 13 of CN202.
4) Adjust R225 so that pin 13 of CN202 level of "A" is equally to pin 14 of CN202 of the noted "A" level.

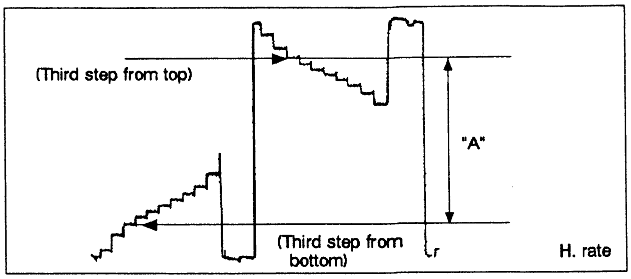


Fig. 3-2-6 White balance-1

3.2.6 White balance-2

Subject	•Alignment tape [MHPE-C] •Stairstep
Mode	•PB
Equipment	•Oscilloscope
Measurement point	•CN202 pin 14 (G OUT) •CN202 pin 12 (B OUT)
Adjustment part	•R228 (SUB BRT B)
Specification	•"B" = "A" + 0.2 ± 0.1 Vp-p

1) Connect the oscilloscope to pin 14 of CN202.
2) Observe waveform and make a note of the level as "A" (see Fig. 3-2-7).
3) Connect the oscilloscope to pin 12 of CN202.
4) Adjust R228 so that pin 12 of CN202 level of "B" is "A" + 0.2 Vp-p (pin 14 of CN202 of the noted "A" level).

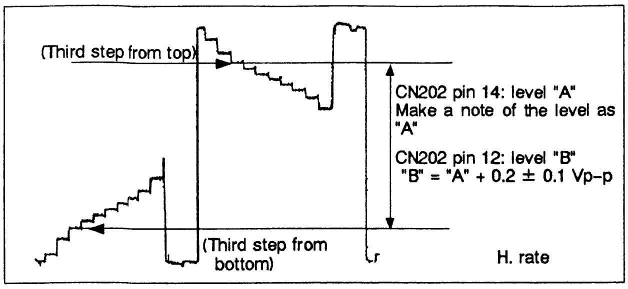

(Third step from top)
CN202 pin 14: level "A"
Make a note of the level as "A"
CN202 pin 12: level "B"
"B" = "A" + 0.2 ± 0.1 Vp-p
(Third step from bottom)
H. rate

Fig. 3-2-7 White balance-2

3.2.7 Colour level

Subject	•Alignment tape [MHVE-2C] •Colour bar
Mode	•PB
Equipment	•Oscilloscope
Measurement point	•CN202 pin 14 (G OUT)
Adjustment part	•R139 (COLOUR LEVEL) 〔PBL board〕
Specification	•"A" = 0.2 ± 0.1 Vp-p

1) Observe waveform at pin 14 of CN202.
2) Adjust R139 so that level of "A" (between the waveform pedestal and magenta level of negative waveform, see Fig. 3-2-8) of a waveform becomes 0.2 Vp-p.

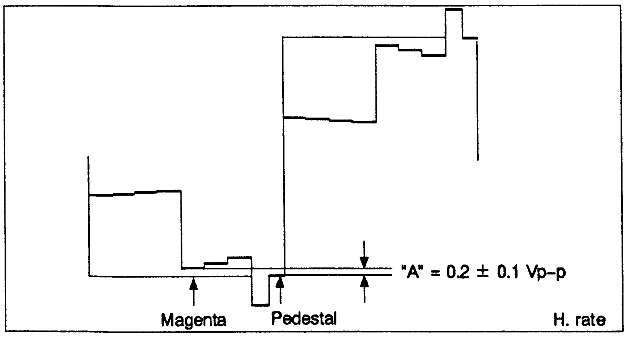

"A" = 0.2 ± 0.1 Vp-p
Magenta
Pedestal
H. rate

Fig. 3-2-8 Colour level

3.3 ELECTRONIC VIEWFINDER (E. VF) ADJUSTMENT (For GR-HF700E)

Note: *Unless otherwise specified, all measurement points and adjustment parts are located on E. VF board.*

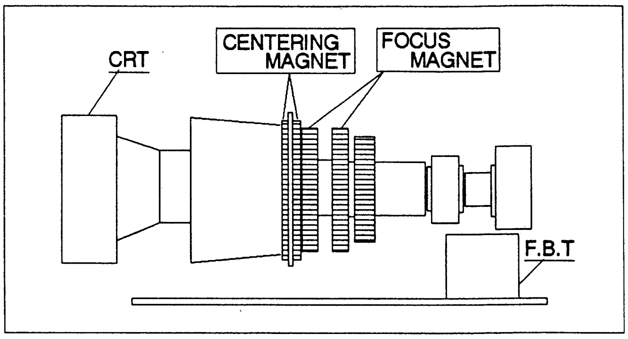

CRT
CENTERING MAGNET
FOCUS MAGNET
F.B.T

Fig. 3-3-1 E. VF

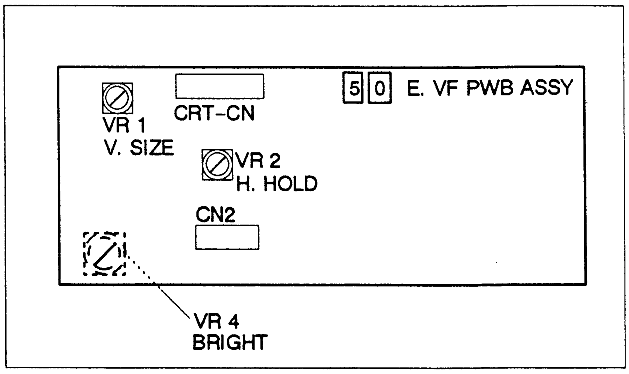

5 0 E. VF PWB ASSY
VR 1
V. SIZE
CRT-CN
VR 2
H. HOLD
CN2
VR 4
BRIGHT

Fig. 3-3-2 E. VF board

3.3.1 Horizontal sync.

Subject	•Alignment tape [MHPE-C] •Stairstep
Mode	•PB
Equipment	•E. VF
Measurement point	•E. VF screen
Adjustment part	•VR2 (H. HOLD)
Specification	•The midpoint of the two markings

1) Observing the viewfinder screen, turn VR2 fully clockwise to make the picture unstable.
2) Slowly return VR2 cunterclockwise to find a point where the picture becomes stable, and mark this position.
3) Turn VR2 fully counterclockwise to make the picture unstable in the same manner as 1) above.
4) Slowly return VR2 clockwise until the picture becomes stable, and mark this position of VR1.
5) Finally set VR2 to the midpoint between the two markings of 2) and 4).

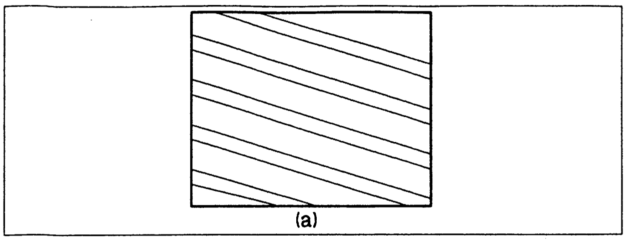


Fig. 3-3-3 Horizontal sync.1

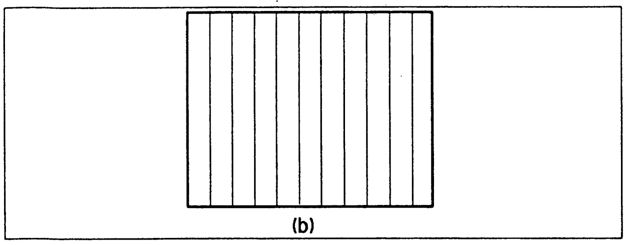


Fig. 3-3-4 Horizontal sync.2

3.3.2 Vertical scanning

Subject	•Alignment tape [MHPE-C] •Stairstep
Mode	•PB
Equipment	•E. VF
Measurement point	•E.VF screen
Adjustment part	•VR1 (V. SIZE)
Specification	•Normal picture amplitude

1) Observing the viewfinder screen, adjust VR1 for normal picture amplitude.

3.3.3 Centering

Subject	•Alignment tape [MHPE-C] •Stairstep
Mode	•PB
Equipment	•E. VF
Measurement point	•E.VF screen
Adjustment part	•Centering magnet 〔CRT assy〕
Specification	•The center of the E. VF screen

1) While observing the viewfinder screen, adjust the centering magnet to locate the stairstep in the center of the viewfinder screen.

3.3.4 Focus

Subject	•Alignment tape [MHPE-C] •Stairstep
Mode	•PB
Equipment	•E. VF
Measurement point	•E. VF screen
Adjustment part	•Focus magnet 〔CRT assy〕
Specification	•The center area is clear and defined

1) While observing the viewfinder screen, adjust the focus magnet for the deflecting yoke so that the image in the central area of the stairstep screen is clear and defined.

3.3.5 Brightness

Subject	• –
Mode	•EE •Lens closed
Equipment	•E. VF
Measurement point	•E. VF screen
Adjustment part	•VR4 (BRIGHT)
Specification	• The CRT raster is just barely visible

1) Close the lens with the cap and adjust VR4 so that the raster of the CRT is just visible in the E. VF.

• MEMO

SECTION 4
CHARTS AND DIAGRAMS

SCHEMATIC DIAGRAM NOTES

Safety precautions
The Components identified by the symbol ⚠ are critical for safety. For continued safety, replace safety critical components only with manufactures recommended parts.

1. Schematic diagram values

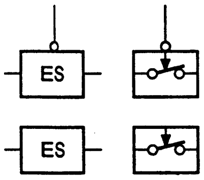
Unless otherwise specified.

1) All resistance values are in ohms. 1/6 W, 1/8 W (refer to parts list).
   Chip resistors are 1/16 W.
   K: KΩ (1000Ω), M: MΩ (1000KΩ)
2) All capacitance values are in µF, (P: PF).
3) All inductance values in µH, (m: mH).
4) All diodes are 1SS133 or MA165, (refer to parts list).

2. Indications

AUX : Active only at high.

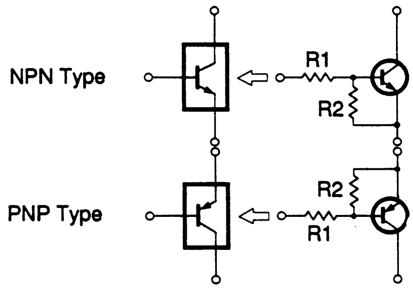
$\overline{\text{AUX}}$: Active only at low.



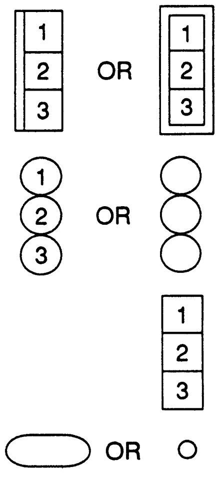
Active only at low for electronic switch.

Active only at high for electronic switch.

Digital transistor :
The digital transistor includes built in resistors.
It features small size and high reliability.



3. Interpreting Connector indications



Removable connector

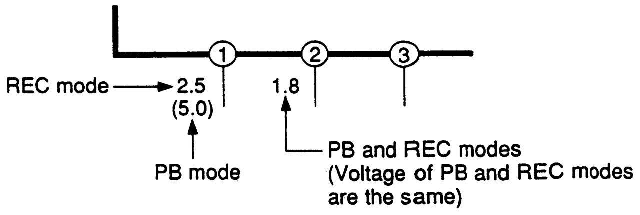
Direct connection on board

Non-removable Board connector

Connected pattern on board

4. Voltage measurement

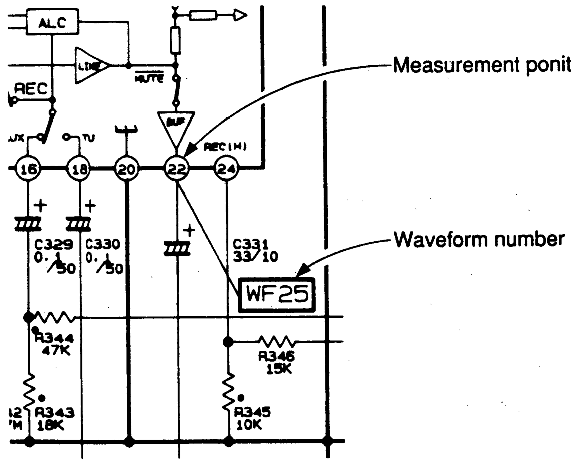
1) Video circuits
   REC: Colour bar signal in SP mode, normal VHS mode.
   PB : Alignment tape, colour bar SP mode, normal VHS mode.
   — : Unmeasurable or unnecessary to measure.
2) Audio circuits
   REC: 1KHz, –8 dBs sine wave signal in SP mode, Normal VHS mode.
   PB : REC then playback it.
3) Movie Camera circuits
   Measured using a correctly illuminated grey scale or colour bar test charts in the E-E mode.
4) Indication on schematic diagram
   Voltage Indications for REC and PB modes on the schematic diagram are as shown below.



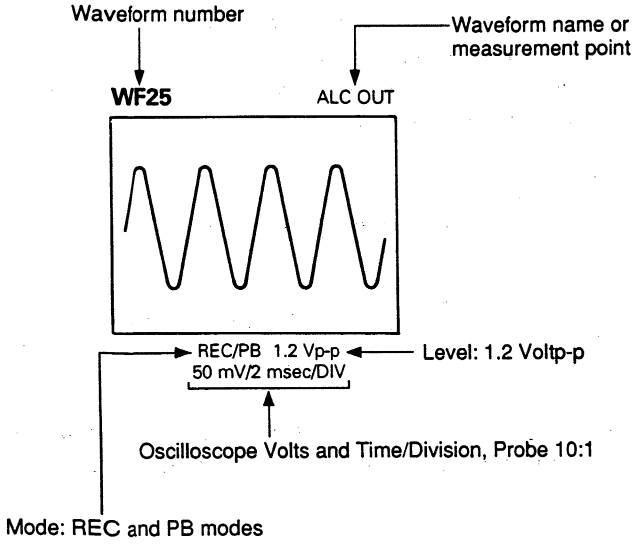
Note: If do not indicate for voltage measurement on the schematic diagram, refer to the voltage charts.

5. **Waveform measurement**

1) Video circuits
   REC: Colour bar signal in SP mode, normal VHS mode.
   PB : Alignment tape, colour bar SP mode, normal VHS mode.
2) Audio circuits
   REC: 1KHz, –8 dBs sine wave signal in SP mode, normal VHS mode.
   PB : REC then playback it.
3) Movie Camera circuits
   Measured using a correctly illuminated grey scale or colour bar test charts in the E-E mode.
4) Indication on schematic diagram
   Waveform indications on the schematic diagram are as shown below.


ALC
LINE
MUTE
REC
BUF
REC(H)
16
18
20
22
24
C329 0.1/50
C330 0.1/50
C331 33/10
WF25
R344 47K
R346 15K
R343 18K
R345 10K
Measurement ponit
Waveform number

5) Waveform indications


Waveform number
Waveform name or measurement point
WF25
ALC OUT
REC/PB 1.2 Vp-p
50 mV/2 msec/DIV
Level: 1.2 Voltp-p
Oscilloscope Volts and Time/Division, Probe 10:1
Mode: REC and PB modes

6. **Signal path Symbols**

The arrows indicate the signal path as follows.

⇨	Playback signal path
▭▶	Playback and recording signal path
➡	Recording signal path (including E-E signal path)
▬▷	Y signal path
▭▷▷	Colour (Chroma) signal path
▭▶▷	R or R-Y signal path
▬▶▷	B or B-Y signal path
▭▷▶	Capstan servo path
▭▶▶	Drum servo path
▬▶▶	Reel servo path

CIRCUIT BOARD NOTES

1. **Colour indications**

1) Foil side :
   Foil side patterns are indicated at GREY shading.
2) Component side :
   Component side patterns are indicated at RED shading.

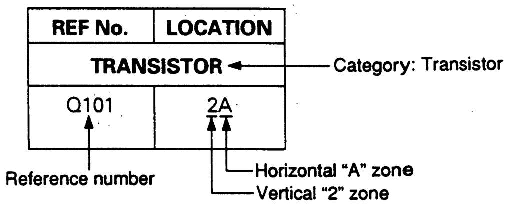
2. **Foil and Component sides**

1) Foil side (B side) :
   Parts on the foil side seen from foil face (pattern face) are indicated.
2) Component side (A side) :
   Parts on the component side seen from component face (parts face) are indicated.

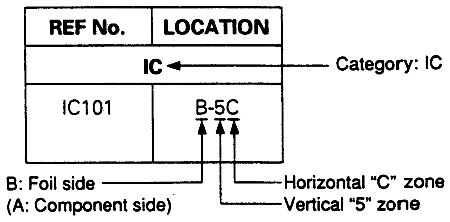
3. **Parts location guides**

Parts location are indicated by guide scale on the circuit board.

1) Signal pattern :


REF No.
LOCATION
TRANSISTOR
Category: Transistor
Q101
2A
Reference number
Horizontal "A" zone
Vertical "2" zone

2) Double pattern :

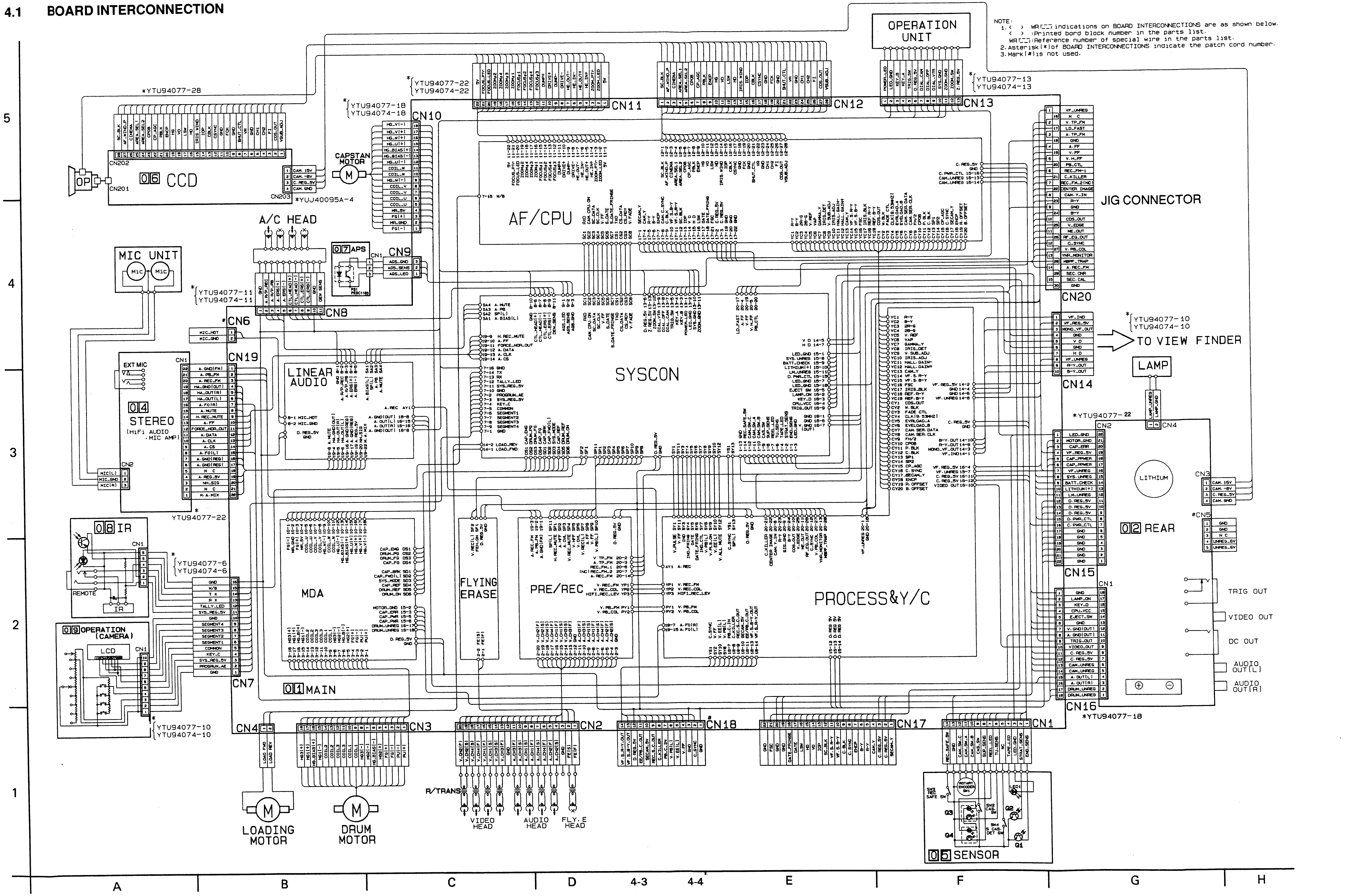

REF No.
LOCATION
IC
Category: IC
IC101
B-5C
B: Foil side
(A: Component side)
Horizontal "C" zone
Vertical "5" zone

Notes:

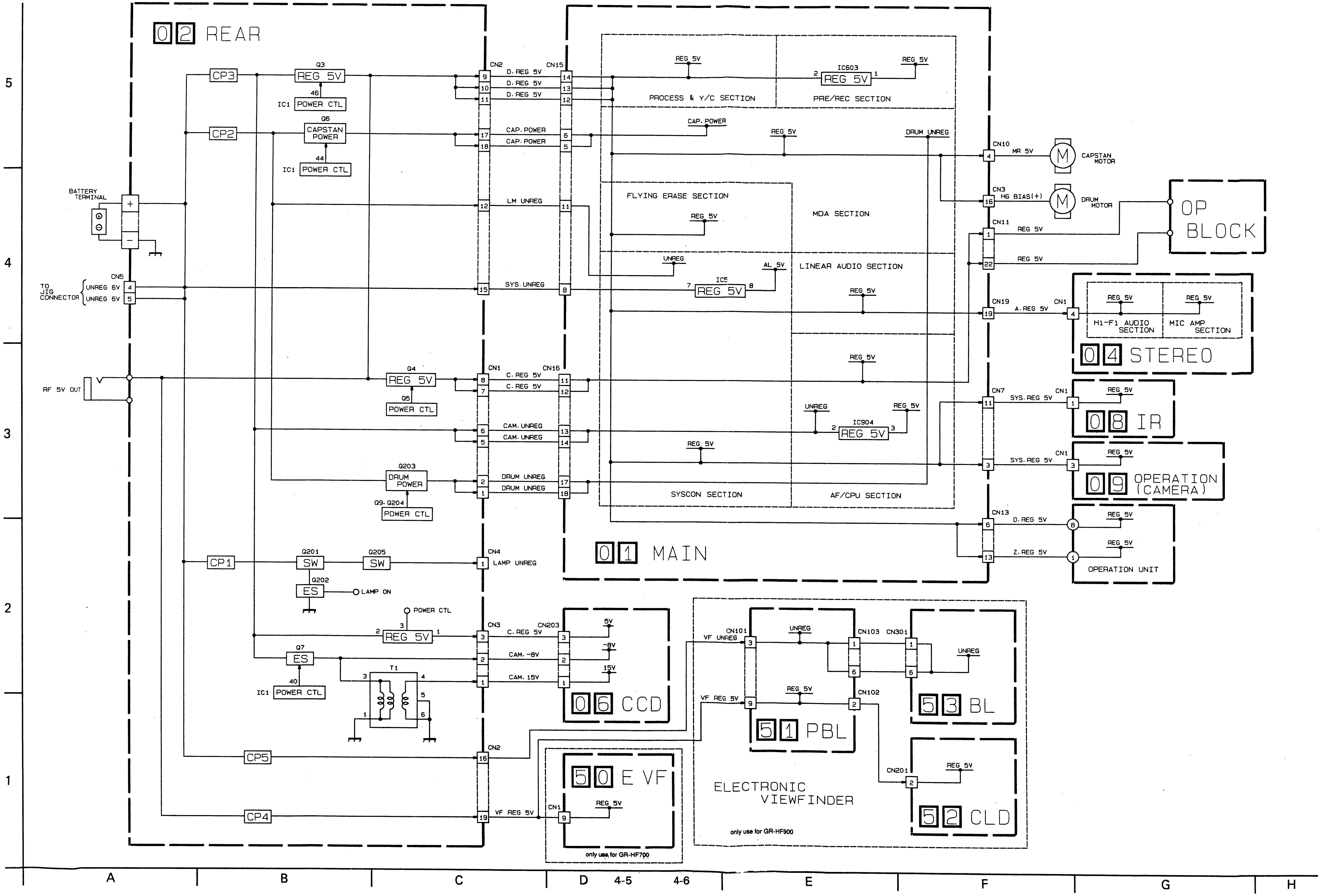
1) **For general information in service manual, please refer to the Service Manual of GENERAL INFORMATION Edition 4 No. 82054D (January 1994).**
2) **For repairing SMC (Surface Mounted Components), please refer to the VIDEO SERVICE GUIDE No. VTS81001.**

4.1 BOARD INTERCONNECTION

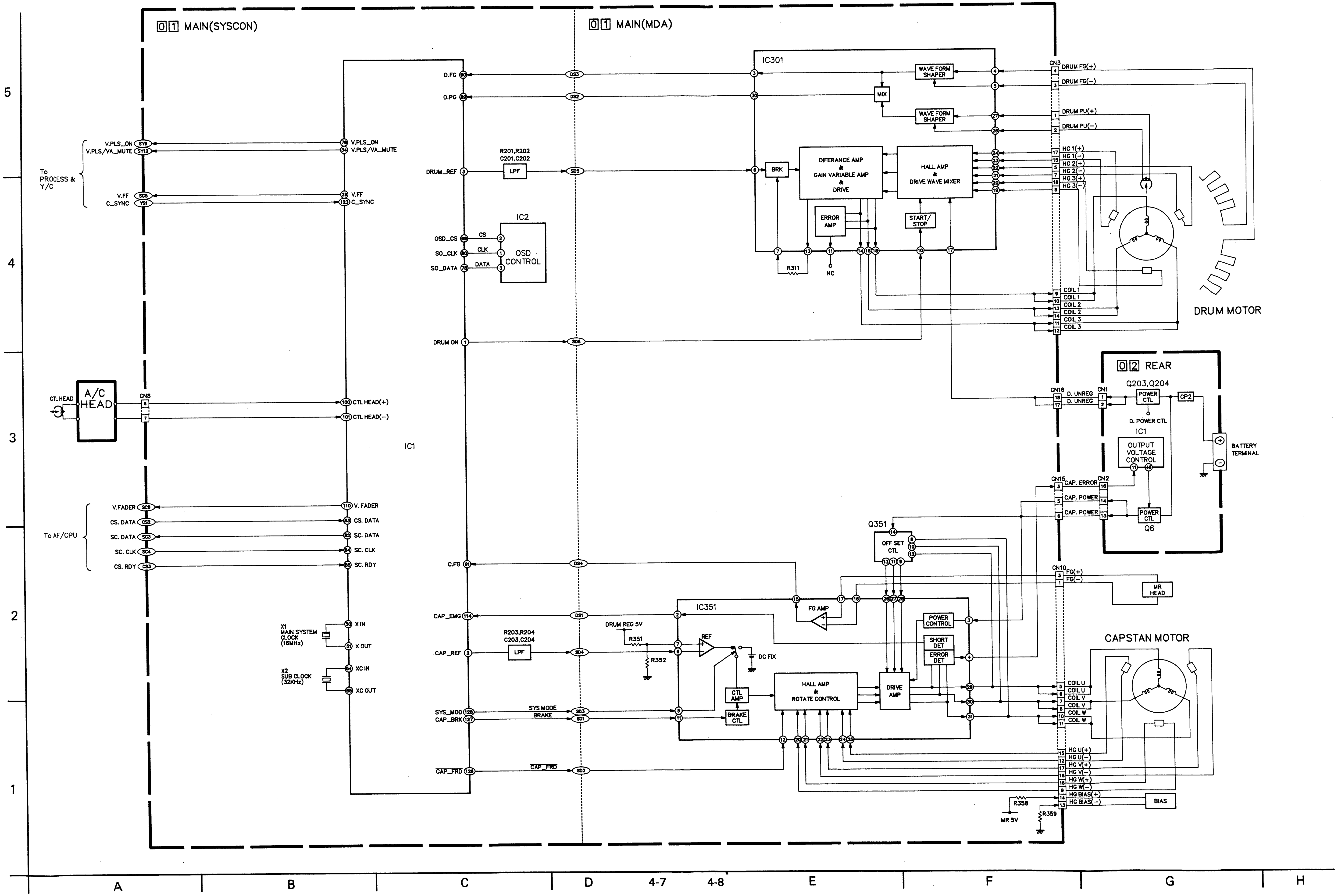
NOTE:
1. < > WR[ ] indications on BOARD INTERCONNECTIONS are as shown below.
< > :Printed bord block number in the parts list.
WR[ ]:Reference number of special wire in the parts list.
2. Asterisk(*)of BOARD INTERCONNECTIONS indicate the patch cord number.
3. Mark(#)is not used.


OPERATION UNIT
06 CCD
OP
CN201
CN202
CN203
*YTU94077-28
*YUJ40095A-4
CAPSTAN MOTOR
A/C HEAD
MIC UNIT
07 APS
04 STEREO (HiFi AUDIO ·MIC AMP)
EXT MIC
08 IR
REMOTE
09 OPERATION (CAMERA)
LCD
AF/CPU
SYSCON
LINEAR AUDIO
MDA
FLYING ERASE
PRE/REC
PROCESS&Y/C
01 MAIN
JIG CONNECTOR
TO VIEW FINDER
LAMP
LITHIUM
02 REAR
TRIG OUT
VIDEO OUT
DC OUT
AUDIO OUT(L)
AUDIO OUT(R)
LOADING MOTOR
DRUM MOTOR
R/TRANS
VIDEO HEAD
AUDIO HEAD
FLY.E HEAD
05 SENSOR
CN1
CN2
CN3
CN4
CN5
CN6
CN7
CN8
CN9
CN10
CN11
CN12
CN13
CN14
CN15
CN16
CN17
CN18
CN19
CN20
*YTU94077-22 YTU94074-22
*YTU94077-18 YTU94074-18
*YTU94077-13 YTU94074-13
*YTU94077-11 YTU94074-11
*YTU94077-10 YTU94074-10
*YTU94077-6 YTU94074-6
*YTU94077-22
*YTU94077-18
5
4
3
2
1
A
B
C
D
4-3
4-4
E
F
G
H

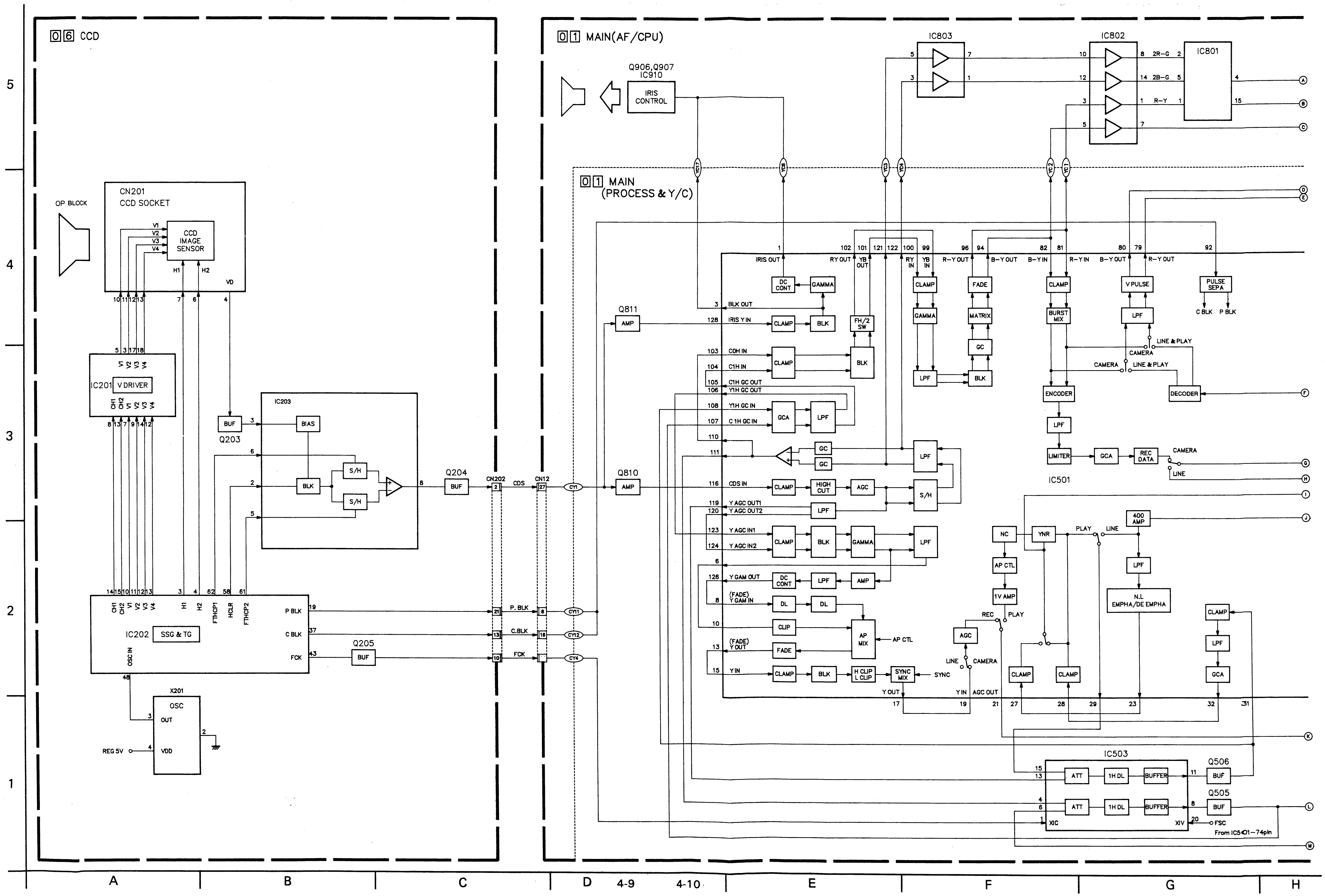
4.2 POWER SYSTEM BLOCK DIAGRAM


02 REAR
01 MAIN
04 STEREO
08 IR
09 OPERATION (CAMERA)
06 CCD
50 E VF
51 PBL
53 BL
52 CLD
OP BLOCK
ELECTRONIC VIEWFINDER
only use for GR-HF900
only use for GR-HF700
BATTERY TERMINAL
TO JIG CONNECTOR
CN5
UNREG 6V
RF 5V OUT
CP1
CP2
CP3
CP4
CP5
Q3
REG 5V
IC1 POWER CTL
Q6
CAPSTAN POWER
Q4
Q5 POWER CTL
Q203
DRUM POWER
Q9, Q204 POWER CTL
Q201 SW
Q205 SW
Q202 ES
LAMP ON
POWER CTL
Q7 ES
T1
CN2
CN15
D. REG 5V
CAP. POWER
LM UNREG
SYS. UNREG
CN1
CN16
C. REG 5V
CAM. UNREG
DRUM UNREG
CN4
LAMP UNREG
CN3
CN203
CAM. -8V
CAM. 15V
5V
-8V
15V
VF REG 5V
PROCESS & Y/C SECTION
IC603
PRE/REC SECTION
DRUM UNREG
FLYING ERASE SECTION
MDA SECTION
UNREG
AL 5V
IC5
LINEAR AUDIO SECTION
IC904
SYSCON SECTION
AF/CPU SECTION
CN10
MR 5V
CAPSTAN MOTOR
HG BIAS(+)
DRUM MOTOR
CN11
CN19
A. REG 5V
Hi-Fi AUDIO SECTION
MIC AMP SECTION
CN7
SYS. REG 5V
CN13
Z. REG 5V
OPERATION UNIT
CN101
VF UNREG
CN103
CN301
CN102
CN201
A
B
C
D
E
F
G
H
1
2
3
4
5

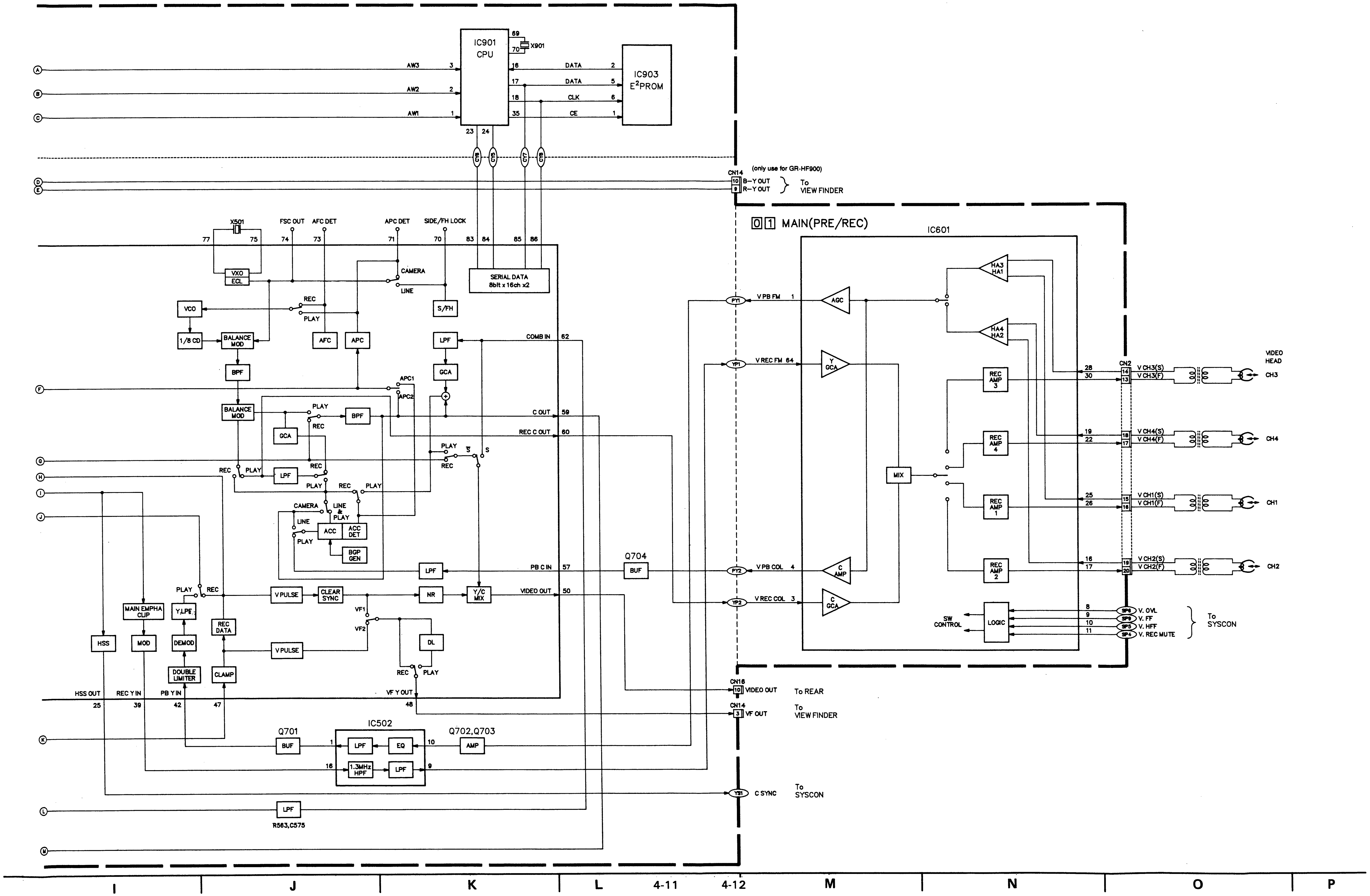
4.3 SYSCON/MDA BLOCK DIAGRAM


01 MAIN(SYSCON)
01 MAIN(MDA)
02 REAR
IC1
IC2
OSD CONTROL
IC301
IC351
To PROCESS & Y/C
V.PLS_ON SY9
V.PLS/VA_MUTE SY12
V.FF SC5
C_SYNC YS1
78 V.PLS_ON
34 V.PLS/VA_MUTE
29 V.FF
123 C_SYNC
D.FG 90
D.PG 89
DS3
DS2
R201,R202
C201,C202
LPF
DRUM_REF 3
SD5
OSD_CS 69
SO_CLK 80
SO_DATA 78
CS
CLK
DATA
DRUM ON 1
SD6
WAVE FORM SHAPER
WAVE FORM SHAPER
MIX
BRK
DIFERANCE AMP & GAIN VARIABLE AMP & DRIVE
HALL AMP & DRIVE WAVE MIXER
ERROR AMP
START/STOP
R311
NC
CN3
DRUM FG(+)
DRUM FG(−)
DRUM PU(+)
DRUM PU(−)
HG 1(+)
HG 1(−)
HG 2(+)
HG 2(−)
HG 3(+)
HG 3(−)
COIL 1
COIL 1
COIL 2
COIL 2
COIL 3
COIL 3
DRUM MOTOR
CTL HEAD
A/C HEAD
CN8
100 CTL HEAD(+)
101 CTL HEAD(−)
CN16
D. UNREG
D. UNREG
CN1
Q203,Q204
POWER CTL
CP2
D. POWER CTL
IC1
OUTPUT VOLTAGE CONTROL
BATTERY TERMINAL
CN15
CAP. ERROR
CAP. POWER
CAP. POWER
CN2
POWER CTL
Q6
To AF/CPU
V.FADER SC8
CS. DATA CS2
SC. DATA SC3
SC. CLK SC4
CS. RDY CS3
110 V. FADER
83 CS. DATA
82 SC. DATA
84 SC. CLK
85 SC. RDY
X1 MAIN SYSTEM CLOCK (16MHz)
50 X IN
51 X OUT
X2 SUB CLOCK (32KHz)
54 XC IN
55 XC OUT
C.FG 91
DS4
Q351
OFF SET CTL
CN10
FG(+)
FG(−)
MR HEAD
CAP_EMG 114
DS1
FG AMP
POWER CONTROL
SHORT DET
ERROR DET
DRUM REG 5V
R351
R352
REF
DC FIX
R203,R204
C203,C204
LPF
CAP_REF 2
SD4
CTL AMP
BRAKE CTL
HALL AMP & ROTATE CONTROL
DRIVE AMP
SYS_MOD 128
CAP_BRK 127
SYS MODE
BRAKE
SD3
SD1
CAP_FRD 126
CAP_FRD
SD2
CAPSTAN MOTOR
COIL U
COIL U
COIL V
COIL V
COIL W
COIL W
HG U(+)
HG U(−)
HG V(+)
HG V(−)
HG W(+)
HG W(−)
HG BIAS(+)
HG BIAS(−)
BIAS
R358
MR 5V
R359
5
4
3
2
1
A
B
C
D
E
F
G
H

4.4 PROCESS AND Y/C BLOCK DIAGRAM

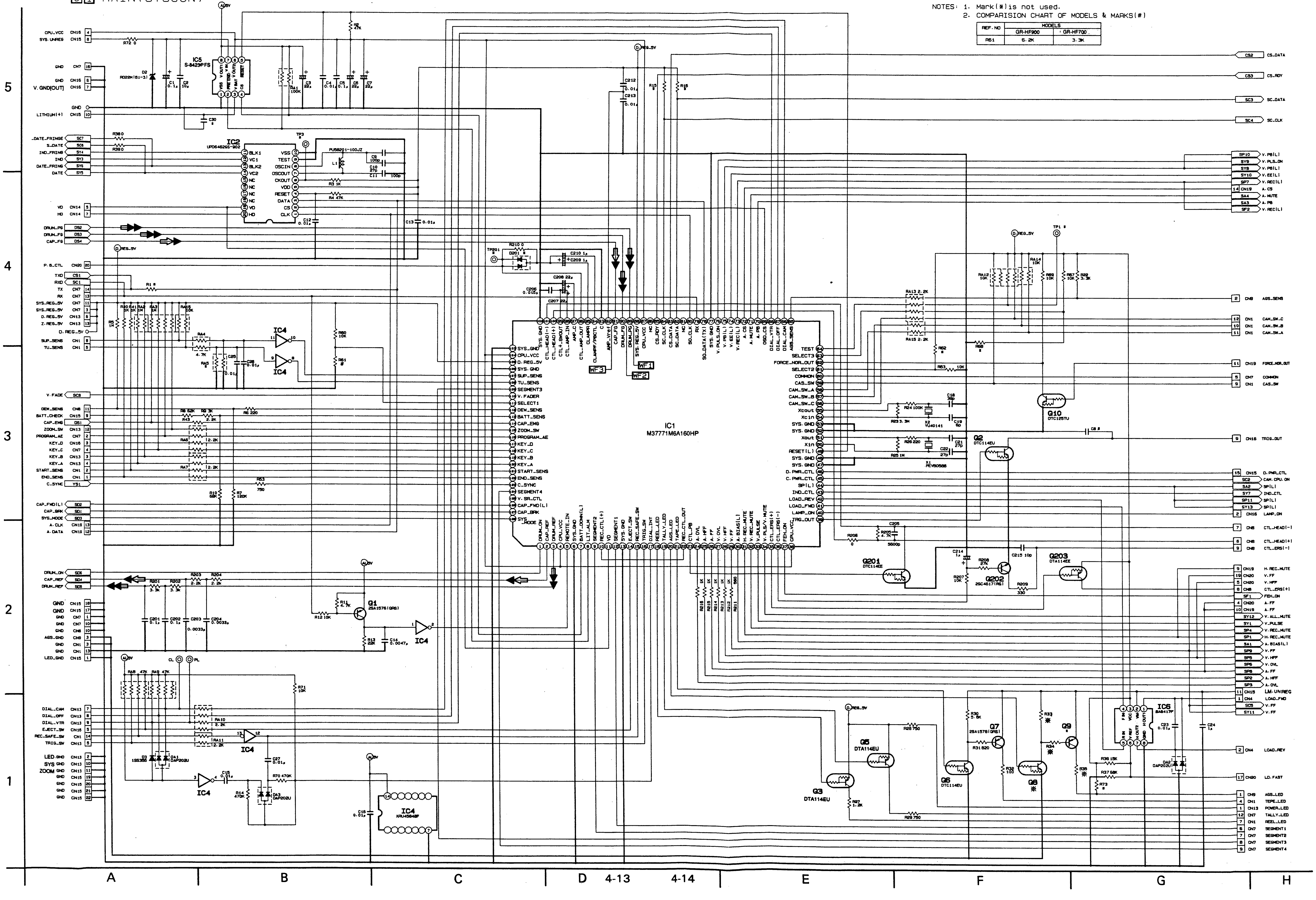


06 CCD
01 MAIN(AF/CPU)
01 MAIN (PROCESS & Y/C)
OP BLOCK
CN201 CCD SOCKET
CCD IMAGE SENSOR
IC201 V DRIVER
IC202 SSG & TG
IC203
BIAS
BLK
S/H
BUF
Q203
Q204
Q205
X201
OSC
OUT
VDD
REG 5V
CN202
CN12
CDS
P. BLK
C.BLK
FCK
Q906,Q907 IC910
IRIS CONTROL
IC803
IC802
IC801
2R−G
2B−G
R−Y
Q811
Q810
AMP
IRIS OUT
RY OUT
YB OUT
RY IN
YB IN
R−Y OUT
B−Y OUT
B−Y IN
R−Y IN
BLK OUT
IRIS Y IN
C0H IN
C1H IN
C1H GC OUT
Y1H GC OUT
Y1H GC IN
C 1H GC IN
CDS IN
Y AGC OUT1
Y AGC OUT2
Y AGC IN1
Y AGC IN2
Y GAM OUT
(FADE) Y GAM IN
(FADE) Y OUT
Y IN
DC CONT
GAMMA
CLAMP
FH/2 SW
FADE
MATRIX
GC
LPF
GCA
HIGH CUT
AGC
DL
CLIP
AP MIX
AP CTL
H CLIP L CLIP
SYNC MIX
SYNC
Y OUT
AGC OUT
BURST MIX
V PULSE
PULSE SEPA
C BLK
P BLK
LINE & PLAY
CAMERA
ENCODER
DECODER
LIMITER
REC DATA
LINE
IC501
NC
YNR
AP CTL
1V AMP
400 AMP
PLAY
REC
N.L EMPHA/DE EMPHA
IC503
ATT
1H DL
BUFFER
Q506
Q505
XIC
XIV
FSC
From IC501−74pin
A
B
C
D
E
F
G
H
4-9
4-10


IC901
CPU
69
70
X901
AW3
AW2
AW1
3
2
1
16
17
18
35
23
24
DATA
DATA
CLK
CE
2
5
6
1
IC903
E²PROM
CY6
CY5
CY7
CY8
CN14
(only use for GR-HF900)
10 B–Y OUT
9 R–Y OUT
To
VIEW FINDER
X501
77
75
FSC OUT
74
AFC DET
73
APC DET
71
SIDE/FH LOCK
70
83
84
85
86
SERIAL DATA
8bit x 16ch x2
VXO
ECL
CAMERA
LINE
REC
PLAY
VCO
1/8 CD
BALANCE MOD
AFC
APC
S/FH
LPF
COMB IN
62
GCA
BPF
APC1
APC2
BALANCE MOD
PLAY
REC
BPF
GCA
C OUT
59
REC C OUT
60
PLAY
S̄
S
REC
REC
PLAY
LPF
REC
PLAY
REC
PLAY
CAMERA
LINE & PLAY
LINE
PLAY
ACC
ACC DET
BGP GEN
LPF
PB C IN
57
Q704
BUF
PLAY
REC
V PULSE
CLEAR SYNC
NR
Y/C MIX
VIDEO OUT
50
MAIN EMPHA CLIP
Y LPF
REC DATA
VF1
VF2
DL
HSS
MOD
DEMOD
V PULSE
DOUBLE LIMITER
CLAMP
REC
PLAY
HSS OUT
25
REC Y IN
39
PB Y IN
42
47
VF Y OUT
48
Q701
BUF
IC502
1
LPF
EQ
10
Q702,Q703
AMP
16
1.3MHz HPF
LPF
9
LPF
R563,C575
01 MAIN(PRE/REC)
IC601
PY1
V PB FM 1
AGC
HA3 HA1
HA4 HA2
YP1
V REC FM 64
Y GCA
REC AMP 3
REC AMP 4
MIX
REC AMP 1
REC AMP 2
PY2
V PB COL 4
C AMP
YP2
V REC COL 3
C GCA
SW CONTROL
LOGIC
CN2
28
30
14 V CH3(S)
13 V CH3(F)
VIDEO HEAD
CH3
19
22
18 V CH4(S)
17 V CH4(F)
CH4
25
26
15 V CH1(S)
16 V CH1(F)
CH1
16
17
19 V CH2(S)
20 V CH2(F)
CH2
8
9
10
11
SP6 V. OVL
SP9 V. FF
SP5 V. HFF
SP4 V. REC MUTE
To
SYSCON
CN16
10 VIDEO OUT
To REAR
CN14
3 VF OUT
To
VIEW FINDER
YS1 C SYNC
To
SYSCON
I
J
K
L
4-11
4-12
M
N
O
P

4.5 SYSCON SCHEMATIC DIAGRAM

01 MAIN(SYSCON)

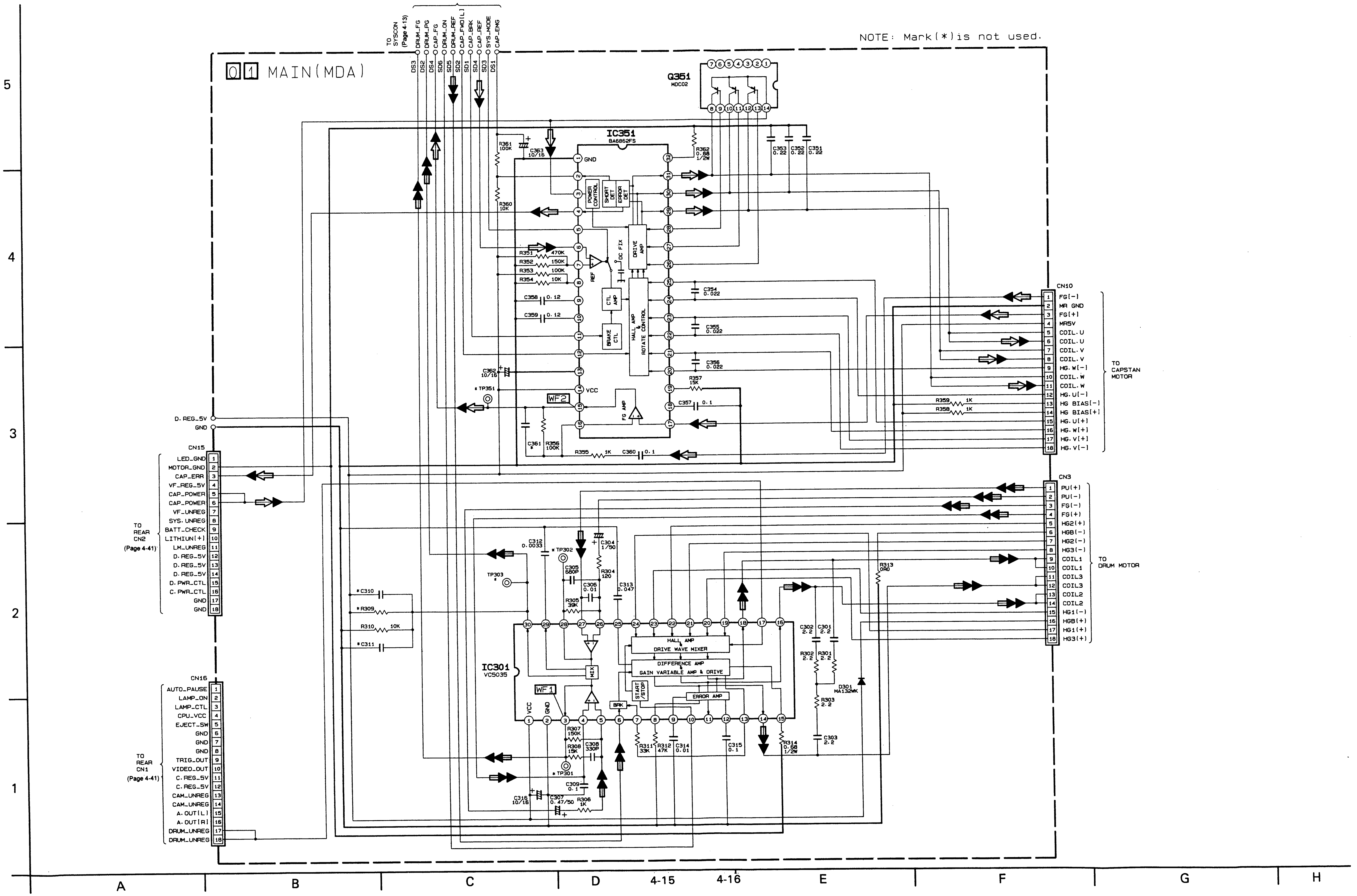


IC1
M37771M6A160HP
IC2
UPD6462GS-902
IC5
S-8423PFS
IC6
BA6417F
IC4
XRU4584BF
Q1
2SA1576(QRS)
Q2
DTC114EU
Q3
DTA114EU
Q5
DTA114EU
Q6
DTC114EU
Q7
2SA1576(QRS)
Q8
Q9
Q10
DTC125TU
Q201
DTC114EE
Q202
2SC4617(RS)
Q203
DTA114EE
X1
PEV60586
X2
YU40141
L1
PU58201-100JZ
DA1
DAP202U
DA2
DAP202U
DA3
DAP202U
D2
RD22M(B1-3)
D3
1SS355
WF1
WF2
WF3
TP1
TP3
TP201
AL5V
D.REG_5V
CPU_VCC
SYS.UNREG
GND
V.GND(OUT)
LITHIUM(+)
DATE_FRINGE
S_DATE
IND_FRING
IND
DATE_FRING
DATE
VD
HD
DRUM_PG
DRUM_FG
CAP_FG
P.B_CTL
TXD
RXD
TX
RX
SYS_REG_5V
D.REG_5V
Z.REG_5V
SUP_SENS
TU_SENS
V.FADE
DEW_SENS
BATT_CHECK
CAP_EMG
ZOOM_SW
PROGRAM_AE
KEY_D
KEY_C
KEY_B
KEY_A
START_SENS
END_SENS
C_SYNC
CAP_FWD(L)
CAP_BRK
SYS_MODE
A.CLK
A.DATA
DRUM_ON
CAP_REF
DRUM_REF
AGS_GND
LED_GND
DIAL_CAM
DIAL_OFF
DIAL_VTR
EJECT_SW
REC_SAFE_SW
TRIG_SW
LED GND
SYS GND
ZOOM GND
CS_DATA
CS_RDY
SC_DATA
SC_CLK
V.PB(L)
V.PLS_ON
V.EE(L)
V.REC(L)
A.CS
A.MUTE
A.PB
AGS_SENS
CAM_SW_C
CAM_SW_B
CAM_SW_A
FORCE_NOR_OUT
COMMON
CAS_SW
TRIG_OUT
D.PWR_CTL
CAM.CPU.ON
SP(L)
IND_CTL
LAMP_ON
CTL_HEAD(-)
CTL_HEAD(+)
CTL_ERS(-)
CTL_ERS(+)
H.REC_MUTE
V.FF
V.HFF
FEH_ON
A.FF
A.HFF
V.ALL_MUTE
V_PULSE
V.REC_MUTE
A.BIAS(L)
V.OVL
A.OVL
LM-UNREG
LOAD_FWD
LOAD_REV
LD.FAST
AGS_LED
TEPE_LED
POWER_LED
TALLY_LED
REEL_LED
SEGMENT1
SEGMENT2
SEGMENT3
SEGMENT4
A
B
C
D
4-13
4-14
E
F
G
H
1
2
3
4
5

NOTES: 1. Mark(※)is not used.
2. COMPARISION CHART OF MODELS & MARKS(#)

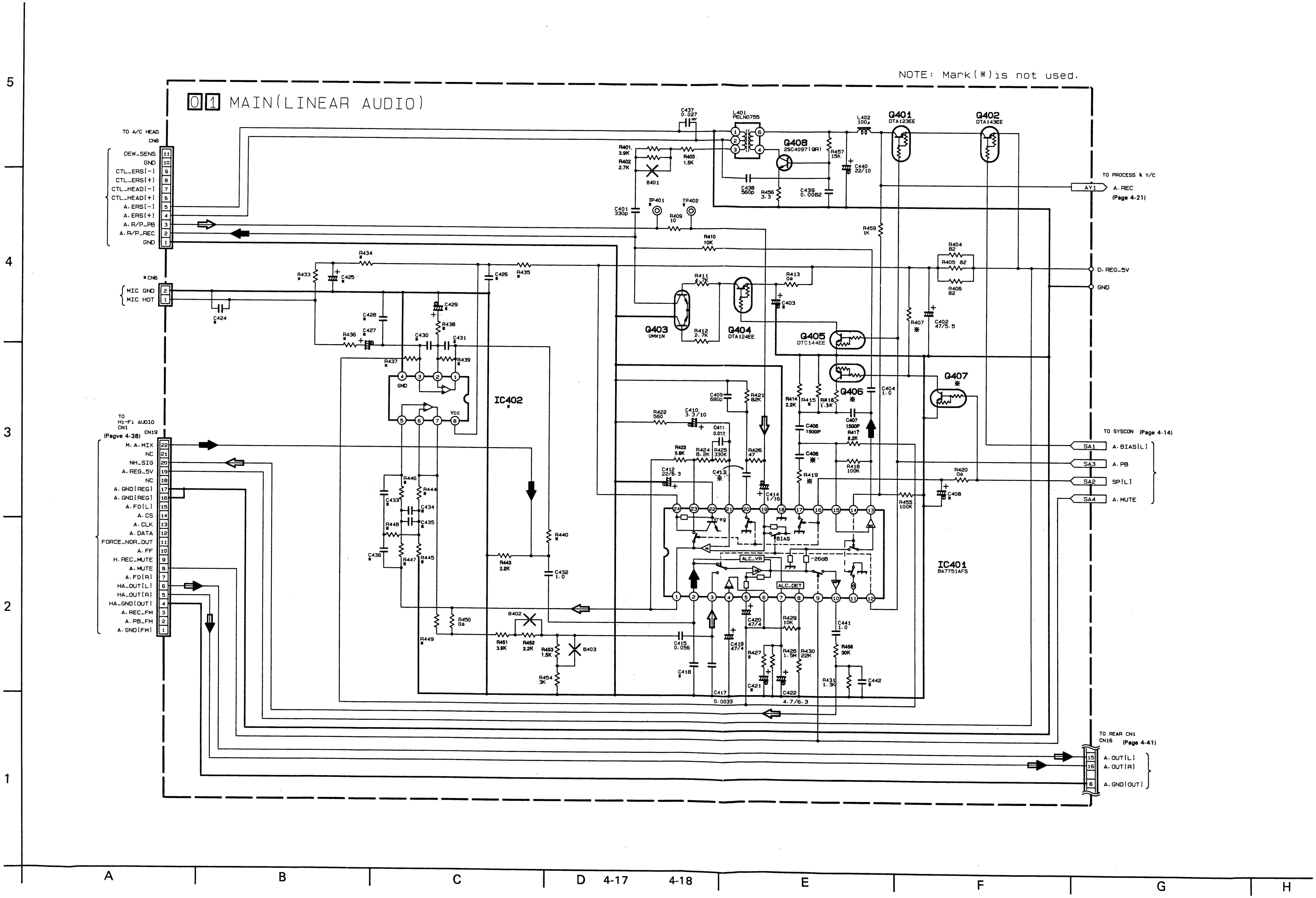
REF. NO	MODELS	
	GR-HF900	GR-HF700
R51	6.2K	3.3K

4.6 MDA SCHEMATIC DIAGRAM

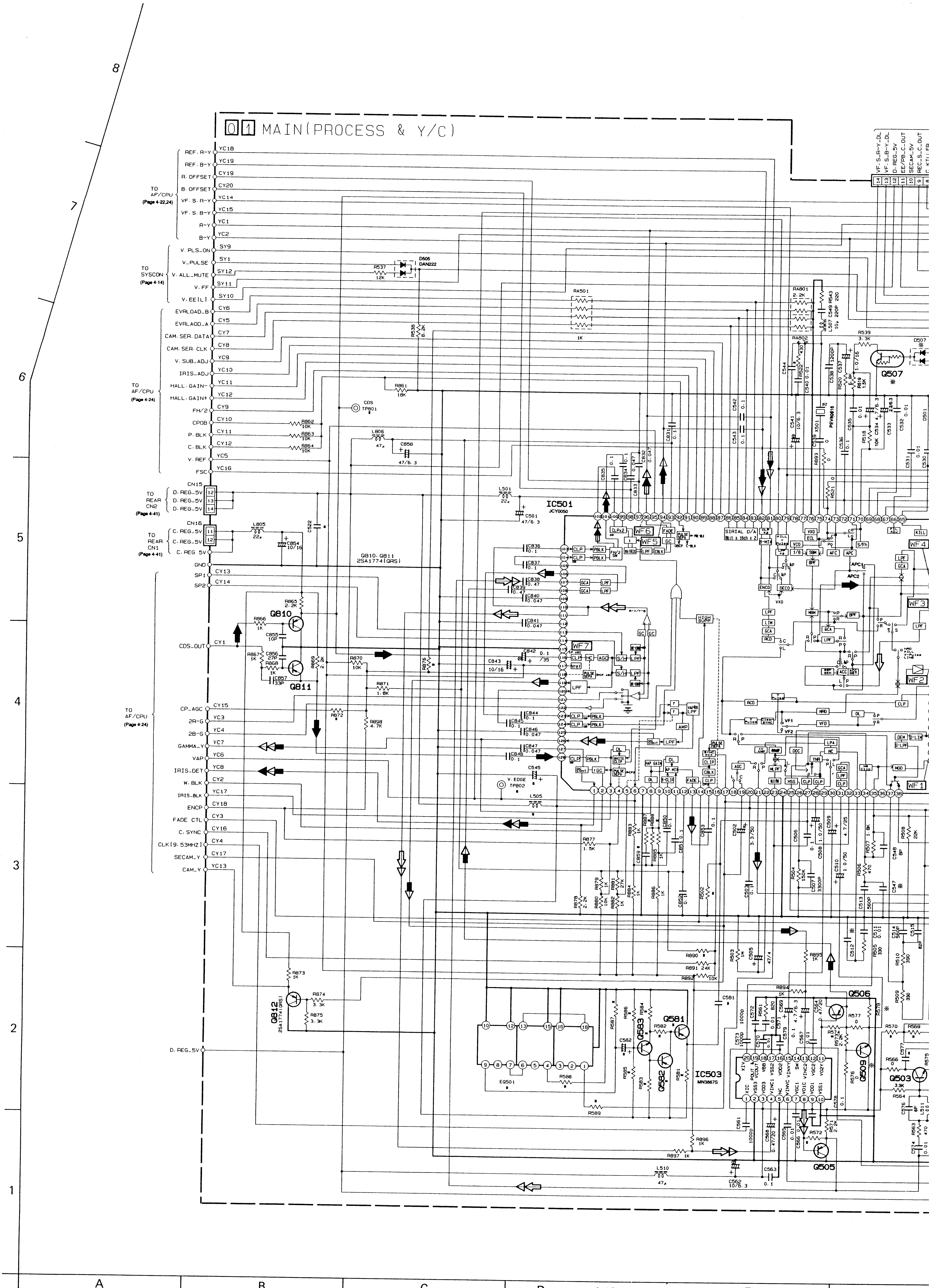


NOTE: Mark(*)is not used.
01 MAIN(MDA)
TO SYSCON (Page 4-13)
DRUM_FG
DRUM_PG
CAP_FG
DRUM_ON
DRUM_REF
CAP_FWD(L)
CAP_BRK
CAP_REF
SYS_MODE
CAP_ENG
DS3 DS2 DS4 SD6 SD5 SD2 SD1 SD4 SD3 DS1
Q351
MDC02
IC351
BA6862FS
GND
VCC
POWER CONTROL
SHORT DET
ERROR DET
DRIVE AMP
DC FIX
REF
CTL AMP
BRAKE CTL
HALL AMP & ROTATE CONTROL
FG AMP
WF2
R361 100K
C363 10/16
R360 10K
R362 0.68 1/2W
C353 0.22
C352 0.22
C351 0.22
R351 470K
R352 150K
R353 100K
R354 10K
C358 0.12
C359 0.12
C354 0.022
C355 0.022
C356 0.022
C362 10/16
*TP351
R357 15K
C357 0.1
C361 *
R356 100K
R355 1K
C360 0.1
D.REG_5V
GND
CN15
LED_GND
MOTOR_GND
CAP_ERR
VF_REG_5V
CAP_POWER
CAP_POWER
VF_UNREG
SYS.UNREG
BATT_CHECK
LITHIUN(+)
LM_UNREG
D.REG_5V
D.REG_5V
D.REG_5V
D.PWR_CTL
C.PWR_CTL
GND
GND
TO REAR CN2 (Page 4-41)
CN10
FG(-)
MR GND
FG(+)
MR5V
COIL.U
COIL.U
COIL.V
COIL.V
HG.W(-)
COIL.W
COIL.W
HG.U(-)
HG BIAS(-)
HG BIAS(+)
HG.U(+)
HG.W(+)
HG.V(+)
HG.V(-)
TO CAPSTAN MOTOR
R359 1K
R358 1K
CN3
PU(+)
PU(-)
FG(-)
FG(+)
HG2(+)
HG8(-)
HG2(-)
HG3(-)
COIL1
COIL1
COIL3
COIL3
COIL2
COIL2
HG1(-)
HG8(+)
HG1(+)
HG3(+)
TO DRUM MOTOR
R313 0R0
IC301
VC5035
HALL AMP
DRIVE WAVE MIXER
DIFFERENCE AMP
GAIN VARIABLE AMP & DRIVE
MIX
START /STOP
BRK
ERROR AMP
WF1
VCC
GND
C312 0.0033
*TP302
C304 1/50
C305 560P
R304 120
C306 0.01
C313 0.047
R305 39K
TP303 *
*C310
*R309
R310 10K
*C311
C302 2.2
C301 2.2
R302 2.2
R301 2.2
R303 2.2
D301 MA132WK
C303 2.2
R307 150K
R308 15K
C308 330P
*TP301
C309 0.1
C316 10/16
C307 0.47/50
R306 1K
R311 33K
R312 47K
C314 0.01
C315 0.1
R314 0.68 1/2W
CN16
AUTO_PAUSE
LAMP_ON
LAMP_CTL
CPU_VCC
EJECT_SW
GND
GND
GND
TRIG_OUT
VIDEO_OUT
C.REG_5V
C.REG_5V
CAM_UNREG
CAM_UNREG
A.OUT(L)
A.OUT(R)
DRUM_UNREG
DRUM_UNREG
TO REAR CN1 (Page 4-41)
5
4
3
2
1
A
B
C
D
E
F
G
H

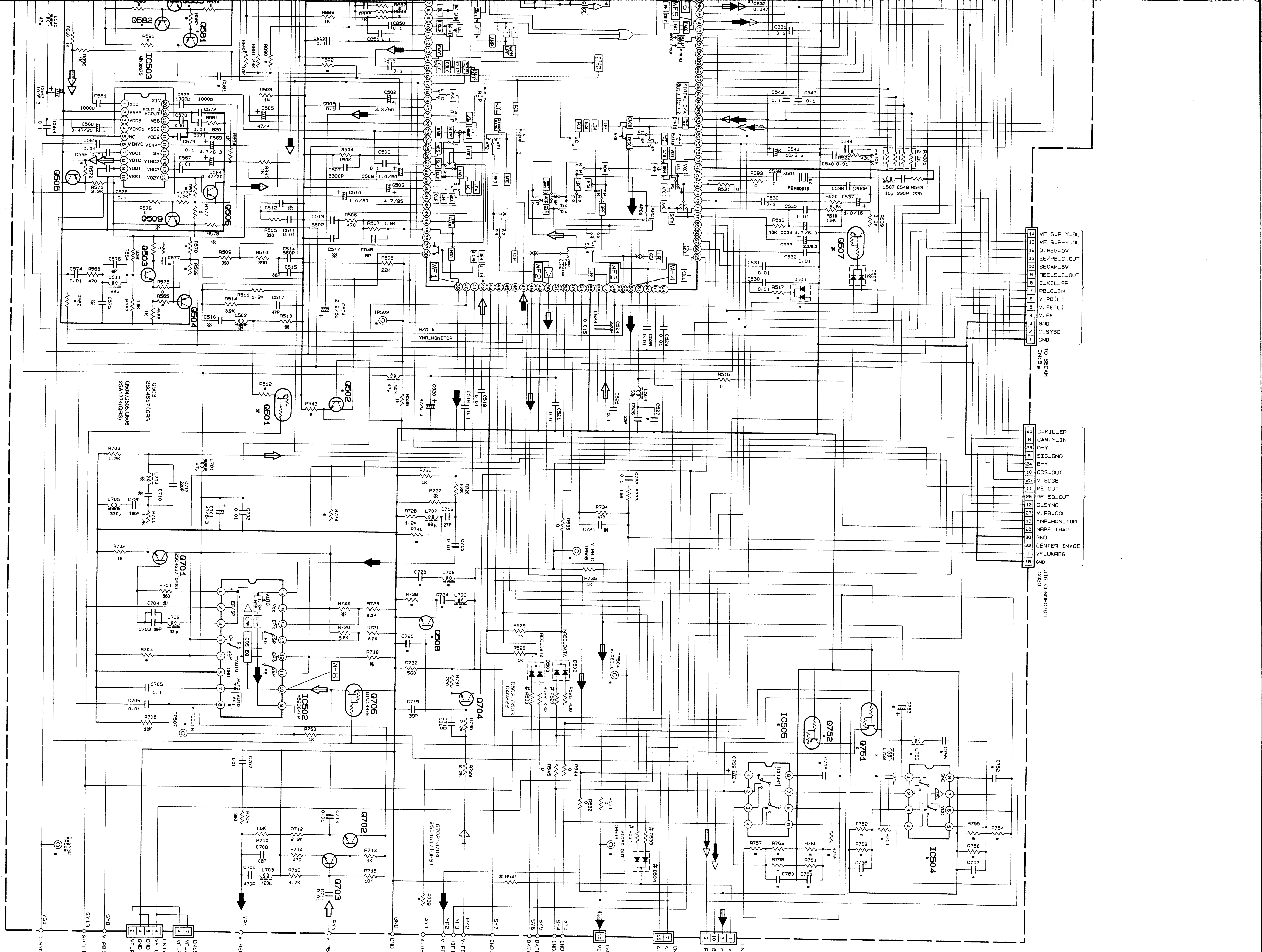
4.7 LINEAR AUDIO SCHEMATIC DIAGRAM

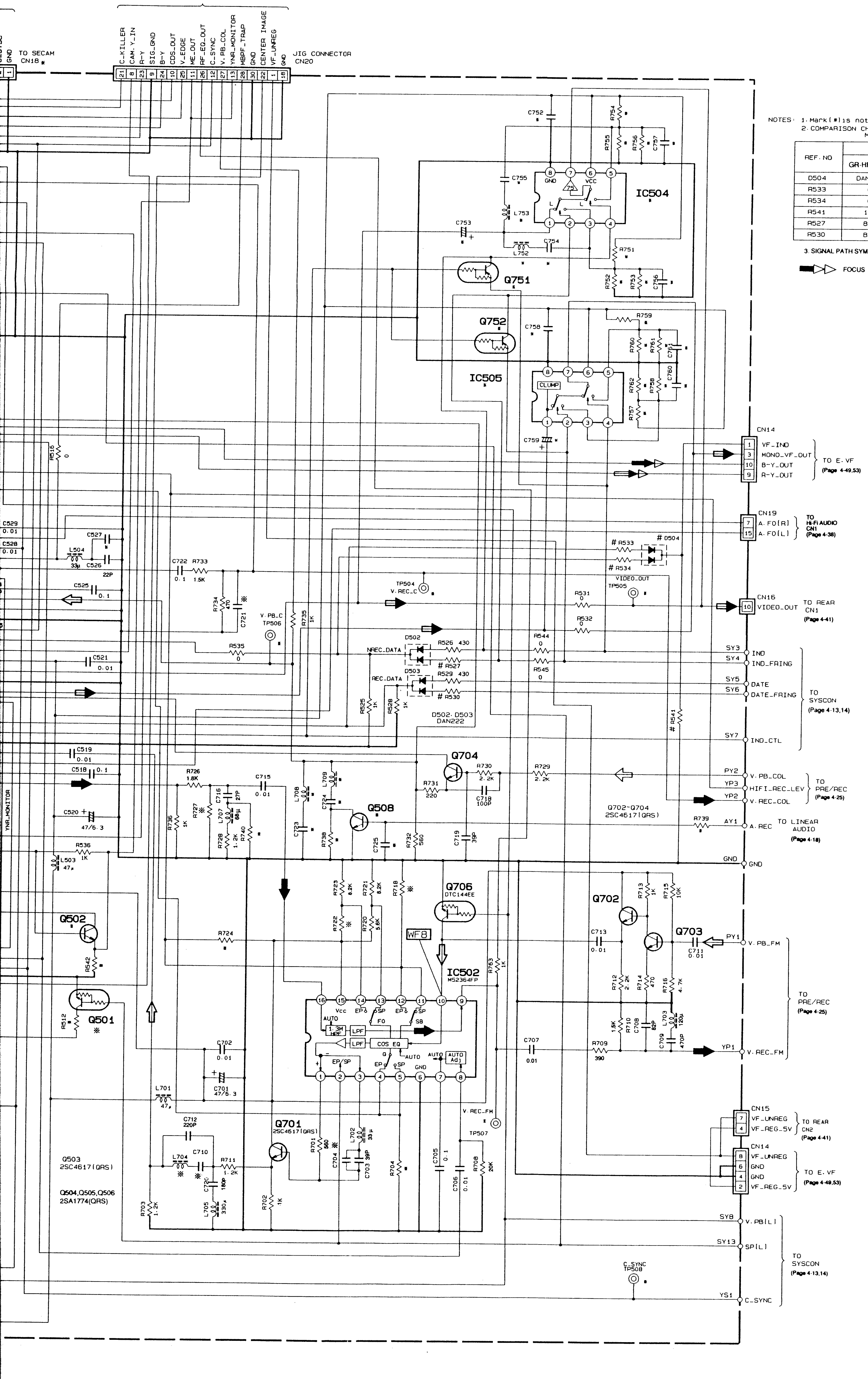

NOTE: Mark(※)is not used.
01 MAIN(LINEAR AUDIO)
TO A/C HEAD CN8
DEW_SENS 11
GND 10
CTL_ERS(-) 9
CTL_ERS(+) 8
CTL_HEAD(-) 7
CTL_HEAD(+) 6
A.ERS(-) 5
A.ERS(+) 4
A.R/P_PB 3
A.R/P_REC 2
GND 1
※CN6
MIC GND 2
MIC HOT 1
TO Hi-Fi AUDIO CN1 CN19 (Pagve 4-38)
M.A.MIX 22
NC 21
NH_SIG 20
A.REG_5V 19
NC 18
A.GND(REG) 17
A.GND(REG) 16
A.FO(L) 15
A.CS 14
A.CLK 13
A.DATA 12
FORCE_NOR_OUT 11
A.FF 10
H.REC_MUTE 9
A.MUTE 8
A.FO(R) 7
HA_OUT(L) 6
HA_OUT(R) 5
HA_GND(OUT) 4
A.REC_FM 3
A.PB_FM 2
A.GND(FM) 1
C437 0.027 MY
L401 PELN0755
L402 100μ
Q401 DTA123EE
Q402 DTA143EE
Q408 2SC4097(QR)
R401 3.9K
R402 2.7K
R403 1.5K
B401
R457 15K
C440 22/10
C438 560p
R456 3.3
C439 0.0082
C401 330p
TP401
TP402
R409 10
R410 10K
R459 1K
TO PROCESS & Y/C
AY1 A.REC (Page 4-21)
R404 82
R405 82
R406 82
D.REG_5V
GND
R434
R433
C425
C426
R435
R411 4.7K
R413 0Ω
C403
C424
C428
C429
R438
C427
R436
C430
C431
R437
R439
GND
Vcc
IC402
Q403 UMW1N
R412 2.7K
Q404 DTA124EE
Q405 DTC144EE
R407 ※
C402 47/5.5
Q407 ※
Q406 ※
C404 1.0
C409 680p
R421 82K
R414 2.2K
R415
R416 1.3K
C407 1500P
R417 8.2K
R418 100K
R422 560
C410 3.3/10
C411 0.012
C405 1500P
C406 ※
R419 ※
R423 5.6K
R424 8.2K
R425 330K
R426 47
C412 22/6.3
C413 ※
C414 1/16
TO SYSCON (Page 4-14)
SA1 A.BIAS(L)
SA3 A.PB
SA2 SP(L)
SA4 A.MUTE
R420 0Ω
C408 ※
R455 100K
C433
C434
C435
R446
R444
R448
C436
R447
R445
R440
R443 2.2K
C432 1.0
Vreg
BIAS
ALC_VR
-26dB
ALC_DET
IC401 BA7751AFS
R450 0Ω
B402
R449
R451 3.9K
R452 2.2K
R453 1.5K
B403
R454 3K
C415 0.056
C418
C417 0.0033
C420 47/4
C419 47/4
R429 10K
R427
R428 1.5M
R430 22K
C421
C422 4.7/6.3
C441 1.0
R458 30K
R431 1.3K
C442
TO REAR CN1 CN16 (Page 4-41)
15 A.OUT(L)
16 A.OUT(R)
8 A.GND(OUT)
5
4
3
2
1
A
B
C
D
E
F
G
H

4.8 PROCESS AND Y/C SCHEMATIC DIAGRAM



01 MAIN(PROCESS & Y/C)
TO AF/CPU (Page 4-22,24)
REF. R-Y
REF. B-Y
R. OFFSET
B. OFFSET
VF. S. R-Y
VF. S. B-Y
R-Y
B-Y
TO SYSCON (Page 4-14)
V. PLS_ON
V_PULSE
V. ALL_MUTE
V. FF
V. EE(L)
TO AF/CPU (Page 4-24)
EVRLOAD_B
EVRLAOD_A
CAM. SER. DATA
CAM. SER. CLK
V. SUB_ADJ
IRIS_ADJ
HALL. GAIN-
HALL. GAIN+
FH/2
CPOB
P. BLK
C. BLK
V. REF
FSC
CN15
TO REAR CN2 (Page 4-41)
D. REG_5V
CN16
TO REAR CN1 (Page 4-41)
C. REG_5V
GND
SP1
SP2
CDS_OUT
TO AF/CPU (Page 4-24)
CP_AGC
2R-G
2B-G
GAMMA_Y
VAP
IRIS_DET
W. BLK
IRIS_BLK
ENCP
FADE CTL
C. SYNC
CLK(9.53MHZ)
SECAM_Y
CAM_Y
D. REG_5V
IC501 JCY0050
IC503 MN3867S
Q810
Q811
Q810, Q811 2SA1774(QRS)
Q812 2SA1774(QRS)
Q581
Q582
Q583
Q503
Q505
Q506
Q507
Q509
D506 DAN222
EQ501
RA501 1K
RA801
RA802
CDS TP801
V. EDGE TP802
SIRIAL D/A
WF1
WF2
WF3
WF4
WF5
WF6
WF7
VF. S_R-Y_DL
VF. S_B-Y_DL
D. REG_5V
EE/PB_C_OUT
SECAM_5V
REC_S_C_OUT
8
7
6
5
4
3
2
1
A
B
C
D
E
F


E
F
G
H
I
J
IC503
MN3867S
Q581
Q582
Q505
Q509
Q506
Q503
Q504
Q501
Q502
Q503 2SC4617(QRS)
Q504,Q505,Q506 2SA1774(QRS)
WF1
WF2
WF3
WF4
WF5
WF6
WF8
SERIAL D/A
TP502
W/D & YNR_MONITOR
D501
Q507
D507
X501
PEV80616
VF.S_R-Y_DL
VF.S_B-Y_DL
D.REG_5V
EE/PB_C_OUT
SECAM_5V
REC_S_C_OUT
C_KILLER
PB_C_IN
V.PB(L)
V.EE(L)
V.FF
GND
C_SYSC
GND
TO SECAM CN18
C_KILLER
CAM.Y_IN
R-Y
SIG_GND
B-Y
CDS_OUT
V_EDGE
ME_OUT
RF_EQ_OUT
C_SYNC
V.PB_COL
YNR_MONITOR
MBPF_TRAP
GND
CENTER IMAGE
VF_UNREG
GND
JIG CONNECTOR CN20
Q701
2SC4617(QRS)
IC502
M52364FP
Q706
DTC144EE
Q508
Q704
D502 D503 DAN222
REC.DATA
NREC.DATA
TP504 V.REC.C
TP506 V.PB.C
TP507 V.REC.FM
IC505
Q752
Q751
IC504
CLAMP
Q702
Q703
Q702-Q704 2SC4617(QRS)
TP505 VIDEO.OUT
D504
TP508 C.SYNC
YS1
SY13
SYB
YP1
PY1
GND
AY1
YP2
YP3
PY2
SY7
SY6
SY5
SY4
SY3
C.SY
SP[L]
V.PB
VF_F
GND
GND
VF_
V.RE
V.PB
GND
A.RE
HIF
V.PE
IND
DAT
DAT
IND
IND
VI
A
A
B
B
W


TO SECAM CN18
GND
JIG CONNECTOR CN20
C_KILLER
CAM.Y_IN
R-Y
SIG_GND
B-Y
CDS_OUT
V_EDGE
ME_OUT
RF_EQ_OUT
C_SYNC
V.PB_COL
YNR_MONITOR
MBPF_TRAP
GND
CENTER IMAGE
VF_UNREG
GND
IC504
Q751
Q752
IC505
CLUMP
Q704
Q508
Q705
DTC144EE
Q702
Q703
IC502
M52364FP
WF8
Q701
2SC4617(QRS)
Q501
Q502
Q503
2SC4617(QRS)
Q504,Q505,Q506
2SA1774(QRS)
Q702-Q704
2SC4617(QRS)
D502
D503
D502, D503
DAN222
NREC_DATA
REC_DATA
# D504
# R533
# R534
# R541
# R527
# R530
VIDEO_OUT TP505
V.REC_C TP504
V.PB_C TP506
V.REC_FM TP507
C_SYNC TP508
YNR_MONITOR
LPF
COS EQ
AUTO ADJ
CN14
VF_IND
MONO_VF_OUT
B-Y_OUT
R-Y_OUT
TO E.VF
(Page 4-49,53)
CN19
A.FO(R)
A.FO(L)
TO
Hi-Fi AUDIO
CN1
(Page 4-38)
CN16
VIDEO_OUT
TO REAR
CN1
(Page 4-41)
SY3 IND
SY4 IND_FRING
SY5 DATE
SY6 DATE_FRING
SY7 IND_CTL
TO
SYSCON
(Page 4-13,14)
PY2 V.PB_COL
YP3 HIFI_REC_LEV
YP2 V.REC_COL
TO
PRE/REC
(Page 4-25)
AY1 A.REC
TO LINEAR
AUDIO
(Page 4-18)
GND GND
PY1 V.PB_FM
YP1 V.REC_FM
TO
PRE/REC
(Page 4-25)
CN15
VF_UNREG
VF_REG_5V
TO REAR
CN2
(Page 4-41)
CN14
VF_UNREG
GND
GND
VF_REG_5V
TO E.VF
(Page 4-49,53)
SY8 V.PB(L)
SY13 SP(L)
YS1 C_SYNC
TO
SYSCON
(Page 4-13,14)
G
H
I
J
K
L

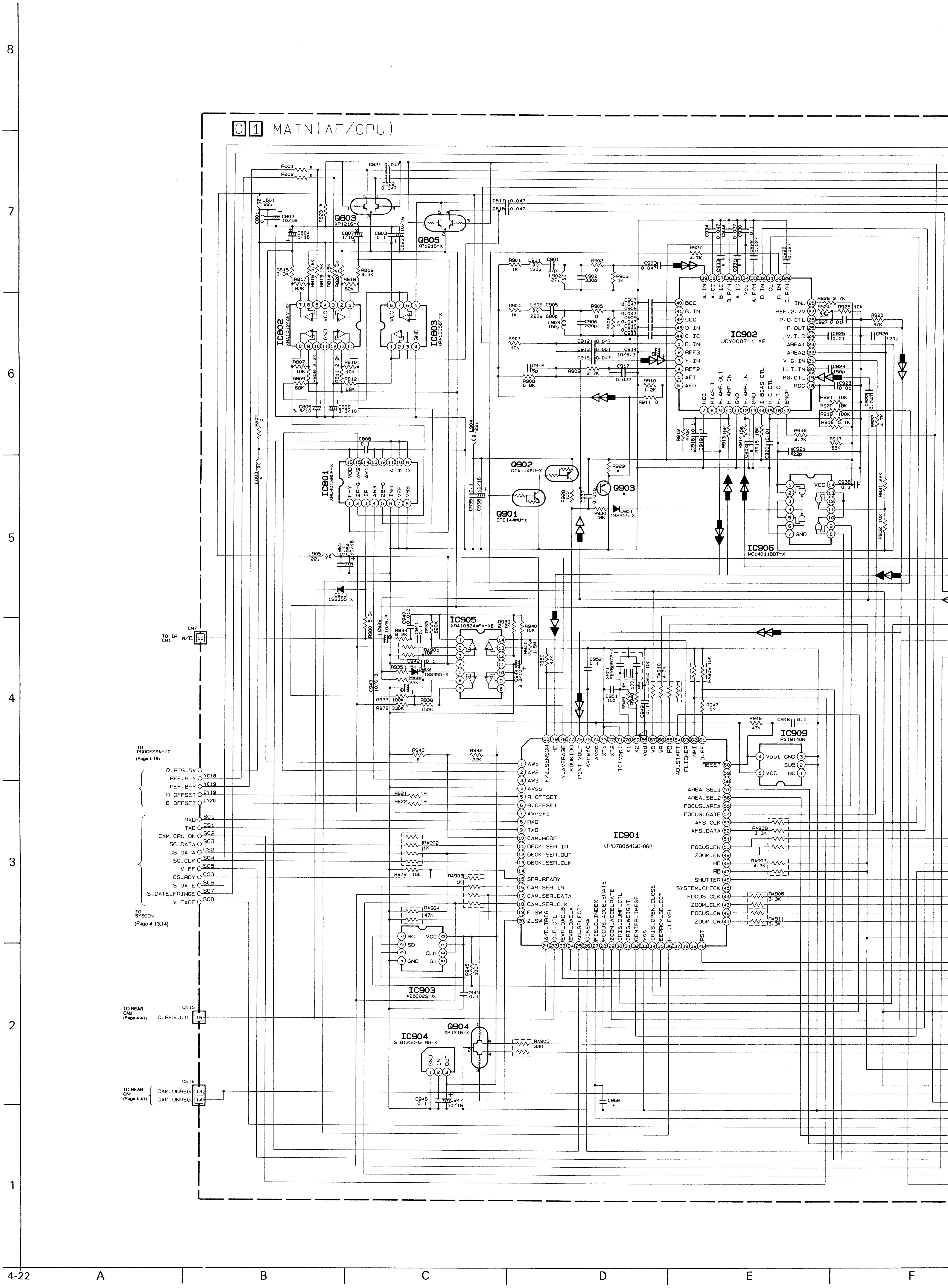
NOTES: 1. Mark(✻) is not used.
2. COMPARISON CHART OF MODELS & MARKS(#)

REF. NO	MODELS	
	GR-HF900EG	GR-HF700EG
D504	DAN222	NOT USED
R533	0	NOT USED
R534	0	NOT USED
R541	10K	NOT USED
R527	820	1K
R530	820	1K

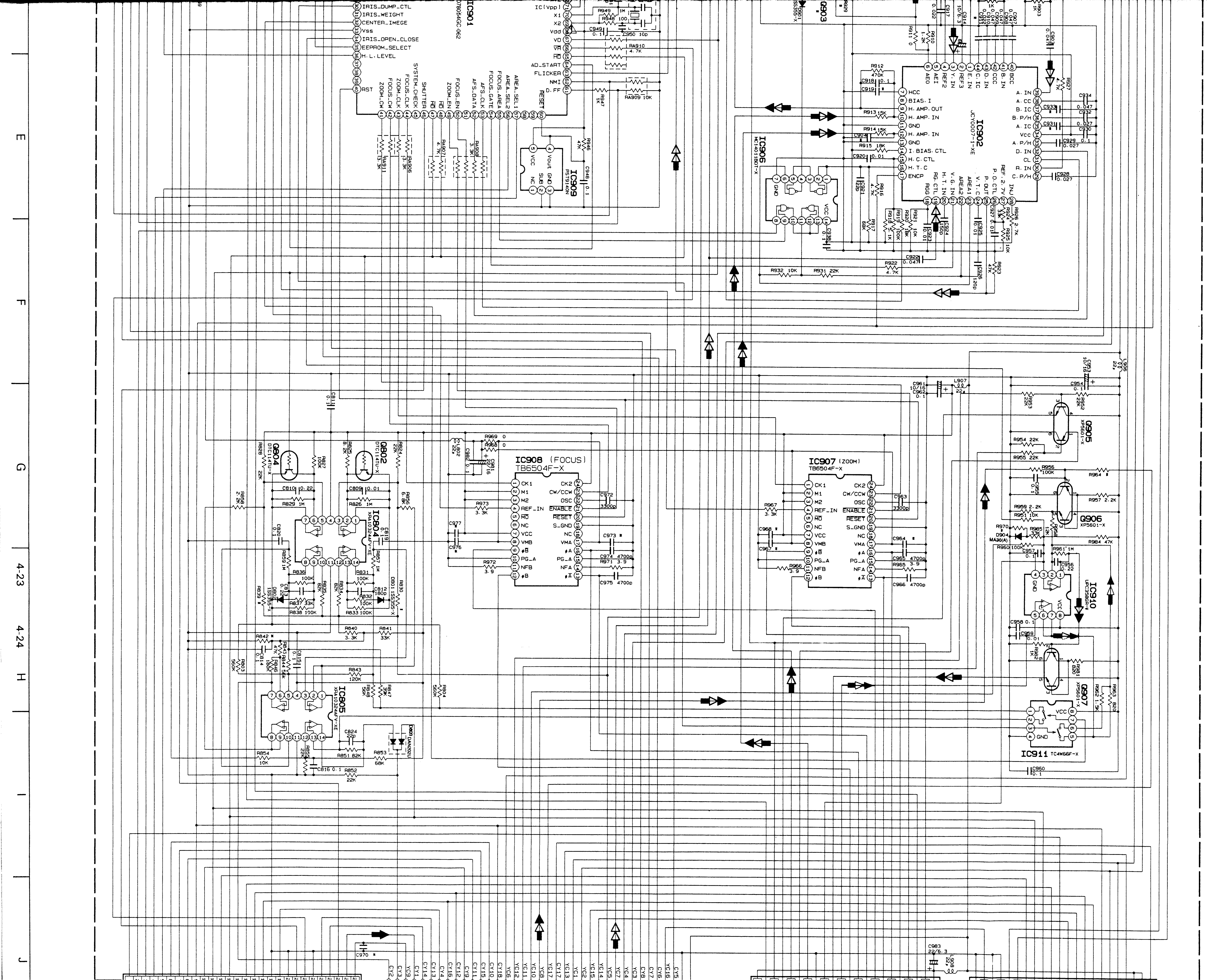
3. SIGNAL PATH SYMBOLS

▶▷▷ FOCUS ▶▷▶ IRIS

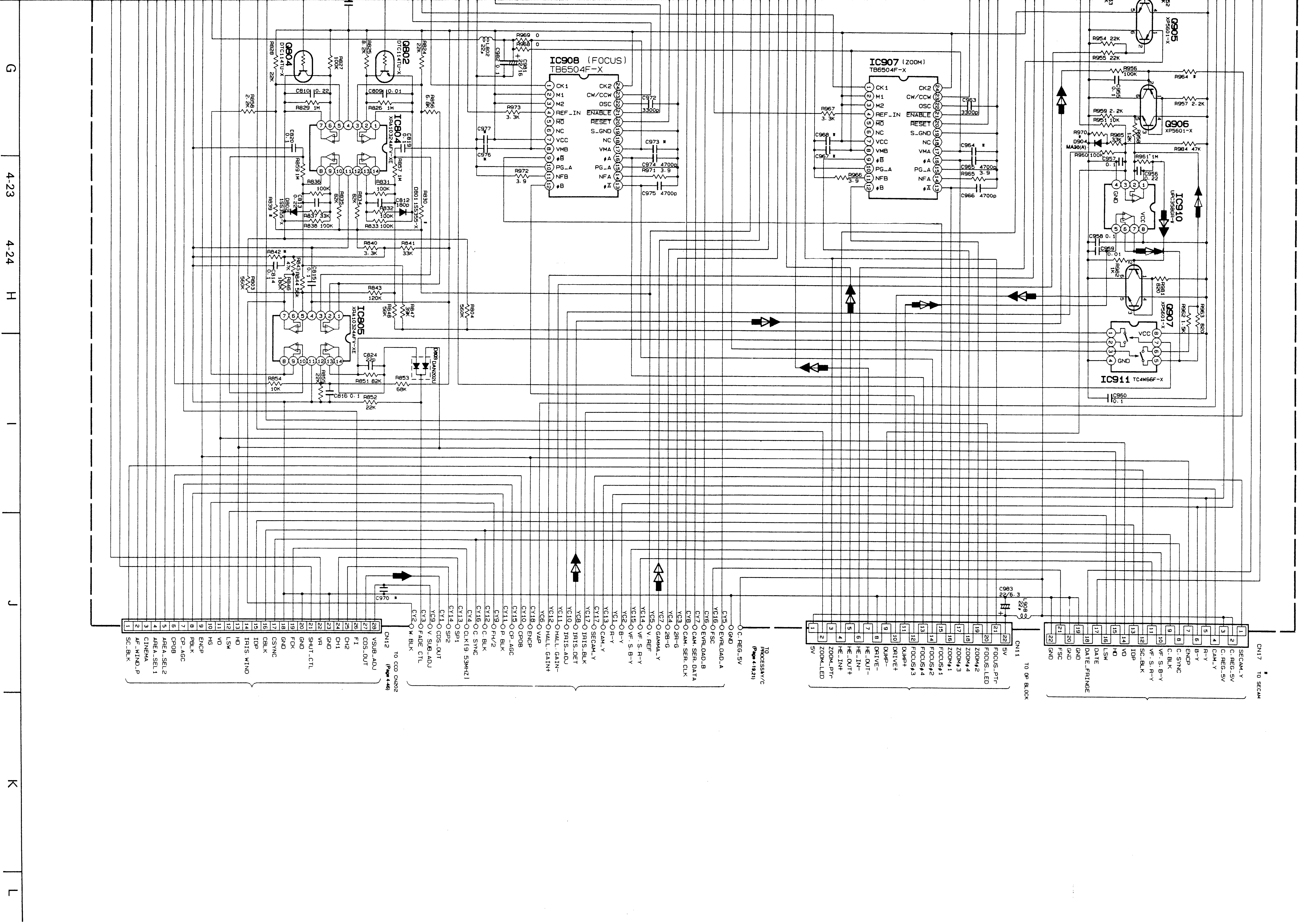
4.9 AF/CPU SCHEMATIC DIAGRAM



01 MAIN(AF/CPU)
IC901
UPD78054GC-062
IC902
JCY0007-1-XE
IC801
XRU4053BCF-X
IC802
XRA10324AFV-XE
IC803
XRA10358F-X
IC903
X25C02S-XE
IC904
S-81250HG-RD-X
IC905
XRA10324AFV-XE
IC906
MC14011BDT-X
IC909
PST9140N
Q803
XP1216-X
Q805
XP1216-X
Q901
DTC144WU-X
Q902
DTA114EU-X
Q903
Q904
XP1216-X
D901
1SS355-X
D902
1SS355-X
D903
1SS355-X
X901
CN7
TO IR CN1
W/B
CN15
TO REAR CN2 (Page 4-41)
C. REG_CTL
CN16
TO REAR CN1 (Page 4-41)
CAM_UNREG
CAM_UNREG
TO PROCESS&Y/C (Page 4-19)
D. REG_5V
REF. R-Y
REF. B-Y
R. OFFSET
B. OFFSET
TO SYSCON (Page 4-13,14)
RXD
TXD
CAM. CPU. ON
SC_DATA
CS_DATA
SC_CLK
V. FF
CS_RDY
S_DATE
S_DATE_FRINGE
V. FADE
AW1
AW2
AW3
AVSS
R. OFFSET
B. OFFSET
AVref1
RXD
TXD
CAM_MODE
DECK_SER_IN
DECK_SER_OUT
DECK_SER_CLK
SER_READY
CAM_SER_IN
CAM_SER_DATA
CAM_SER_CLK
F_SW
Z_SW
A/D_TRIG
C_P_CTL
EVRLOAD_B
EVRLOAD_A
AN_SELECT1
CINEMA
FIELD_INDEX
FOCUS_ACCELERATE
ZOOM_ACCELARATE
IRIS_DUMP_CTL
IRIS_WEIGHT
CENTER_IMEGE
Vss
IRIS_OPEN_CLOSE
EEPROM_SELECT
H. L. LEVEL
RST
ZOOM_CW
FOCUS_CW
ZOOM_CLK
FOCUS_CLK
SYSTEM_CHECK
SHUTTER
ZOOM_EN
FOCUS_EN
AFS_DATA
AFS_CLK
FOCUS_GATE
FOCUS_AREA
AREA_SEL2
AREA_SEL1
RESET
D. FF
NMI
FLICKER
AD_START
VD
Vdd
X2
X1
IC(Vpp)
XT2
XT1
AVdd
AVref0
PINT_VOLT
KOUKIDO
Y_AVERAGE
HE
F/Z_SENSOR
BCC
B. IN
CCC
D. IN
C. IC
E. IN
REF3
Y. IN
REF2
AEI
AEO
HCC
BIAS. I
H. AMP. OUT
H. AMP. IN
GND
H. AMP. IN
GND
I. BIAS. CTL
H. C. CTL
H. T. C
ENCP
RGG
RG. CTL
H. T. IN
V. G. IN
AREA2
AREA1
V. T. C
P. OUT
P. D. CTL
REF. 2. 7V
INJ
C. P/H
R. IN
CL
D. IN
A. P/H
Vcc
A. IC
B. P/H
B. IC
A. CC
A. IN
R-Y
2R-G
IR
AW3
2B-G
INH
VEE
VSS
VDD
AW2
AW1
A
B
C
Vout
SUB
NC
VCC
GND
SC
SD
CLK
SI
IN
OUT
R801
R802
R805
L801
L803
L901
L902
L903
L904
L905
L909
C801
C802
C803
C804
C805
C806
C807
C808
C817
C818
C821
C822
C823
C901
C902
C903
C905
C906
C907
C908
C909
C910
C911
C912
C913
C914
C915
C916
C917
C918
C919
C920
C921
C922
C923
C924
C925
C926
C927
C928
C929
C930
C931
C932
C933
C934
C935
C936
C937
C938
C939
C940
C941
C942
C943
C944
C945
C946
C947
C948
C949
C950
C951
C952
C969
C984
C985
R807
R808
R809
R810
R811
R812
R813
R814
R815
R816
R817
R818
R819
R820
R821
R822
R823
R901
R902
R903
R904
R905
R906
R907
R908
R909
R910
R911
R912
R913
R914
R915
R916
R917
R918
R919
R920
R921
R922
R923
R924
R925
R926
R927
R928
R929
R930
R931
R932
R933
R934
R935
R936
R937
R938
R939
R940
R941
R942
R943
R945
R946
R947
R948
R949
R950
R978
R979
R980
RA901
RA902
RA903
RA904
RA905
RA906
RA907
RA908
RA909
RA910
RA911
A
B
C
D
E
F
1
2
3
4
5
6
7
8

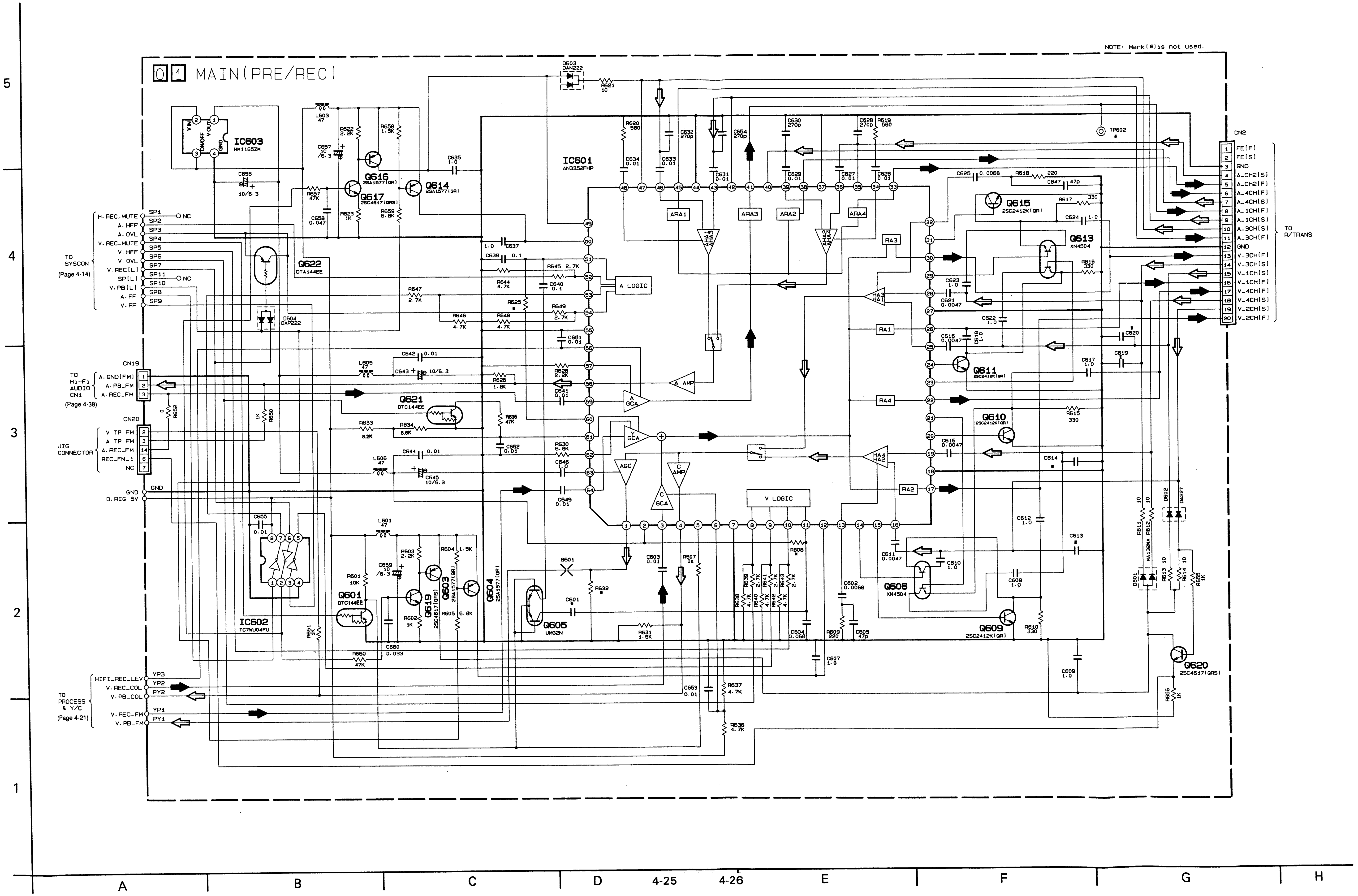

E
F
G
4-23
4-24
H
I
J
IC901
IRIS_DUMP_CTL
IRIS_WEIGHT
CENTER_IMEGE
Vss
IRIS_OPEN_CLOSE
EEPROM_SELECT
H.L.LEVEL
RST
ZOOM_CW
FOCUS_CW
ZOOM_CLK
FOCUS_CLK
SYSTEM_CHECK
SHUTTER
ZOOM_EN
FOCUS_EN
FOCUS_GATE
AFS_CLK
AFS_DATA
FOCUS_AREA
AREA_SEL2
AREA_SEL1
RESET
D.FF
NMI
FLICKER
AD_START
IC(Vpp)
X1
X2
Vdd
VD
IC909
PST910AN
IC902
JCY0007-T-XE
IC906
MC14011BDT-X
Q903
IC908 (FOCUS)
TB6504F-X
IC907 (ZOOM)
TB6504F-X
CK1
M1
M2
REF_IN
MO
NC
VCC
VMB
ϕB
PG_A
NFB
CK2
CW/CCW
OSC
ENABLE
RESET
S_GND
VMA
ϕA
NFA
Q804
DTC114TU-X
Q802
DTC114TU-X
IC804
XRA10324AFV-XE
IC805
XRA10324AFV-XE
D803
DAN202U
Q905
XP5601-X
Q906
XP5601-X
IC910
UPC358G-Y
Q907
XP5601-X
IC911
TC4W66F-X
D904
MA30(A)
C970
C983
22/6.3
L908
22μ
L906
22μ
L907
22μ

NOTES: 1. Mark(*) is not used.
2. SIGNAL PATH SYMBOLS.
FOCUS IRIS


4-23
4-24
G
H
I
J
K
L
IC908 (FOCUS) TB6504F-X
IC907 (ZOOM) TB6504F-X
IC804 XRA10324AFV-XE
IC805 XRA10324AFV-XE
IC910 UPC358GR-W
IC911 TC4W66F-X
Q802 DTC114TU-X
Q804 DTC114TU-X
Q905 XP5601-X
Q906 XP5601-X
Q907 XP5601-X
D803 DAN202U
D904 MA3Q(A)
CN12
SC_BLK
AF_WIND_P
CINEMA
AREA_SEL1
AREA_SEL2
CPOB
CP_AGC
PBLK
ENCP
HG
VD
LSW
HD
IRIS WIND
IDP
CBLK
CSYNC
GND
FCK
GND
SHUT_CTL
VA
GND
CH1
CH2
FI
CDS_OUT
VSUB_ADJ
TO CCD CN202 (Page 4-46)
CY2 W BLK
CY3 FADE CTL
CY3 V SUB-ADJ
YC9 CDS_OUT
CY1 SP2
CY14 SP1
CY13 CLK(9.53MHZ)
CY4 C SYNC
CY16 C BLK
CY12 FH/2
CY9 P BLK
CY11 CP_AGC
CY15 CPOB
CY10 ENCP
CY18 VAP
YC6 HALL GAIN+
YC12 HALL GAIN-
YC11 IRIS_ADJ
YC10 IRIS_DET
YC8 IRIS_BLK
YC17 SECAM_Y
YC13 CAM_Y
YC1 R-Y
YC2 B-Y
YC15 VF.S.B-Y
YC14 VF.S.R-Y
YC5 V.REF
YC7 GAMMA_Y
YC4 2B-G
YC3 2R-G
CY8 CAM.SER.CLK
CY7 CAM.SER.DATA
CY6 EVRLOAD_B
YC16 FSC
CY5 EVRLOAD_A
GND
C.REG_5V
TO PROCESS&Y/C (Page 4-18,21)
CN11
5V
ZOOM_LED
ZOOM_PTr
HE_IN+
HE_OUT+
HE_IN-
HE_OUT-
DRIVE-
DUMP-
DRIVE+
DUMP+
FOCUSφ3
FOCUSφ4
FOCUSφ2
FOCUSφ1
ZOOMφ1
ZOOMφ3
ZOOMφ4
ZOOMφ2
FOCUS_LED
FOCUS_PTr
5V
TO OP BLOCK
CN17 *
SECAM_Y
C.REG_5V
C.REG_5V
CAM_Y
R-Y
B-Y
ENCP
C.SYNC
C.BLK
VF.S.B-Y
VF.S.R-Y
SC.BLK
IDP
VD
HD
LSW
DATE
DATE_FRINGE
GND
GND
FSC
GND
TO SECAM

NOTES: 1. Mark(*)is not used.
2. SIGNAL PATH SYMBOLS.
⇨ FOCUS ⇩ IRIS

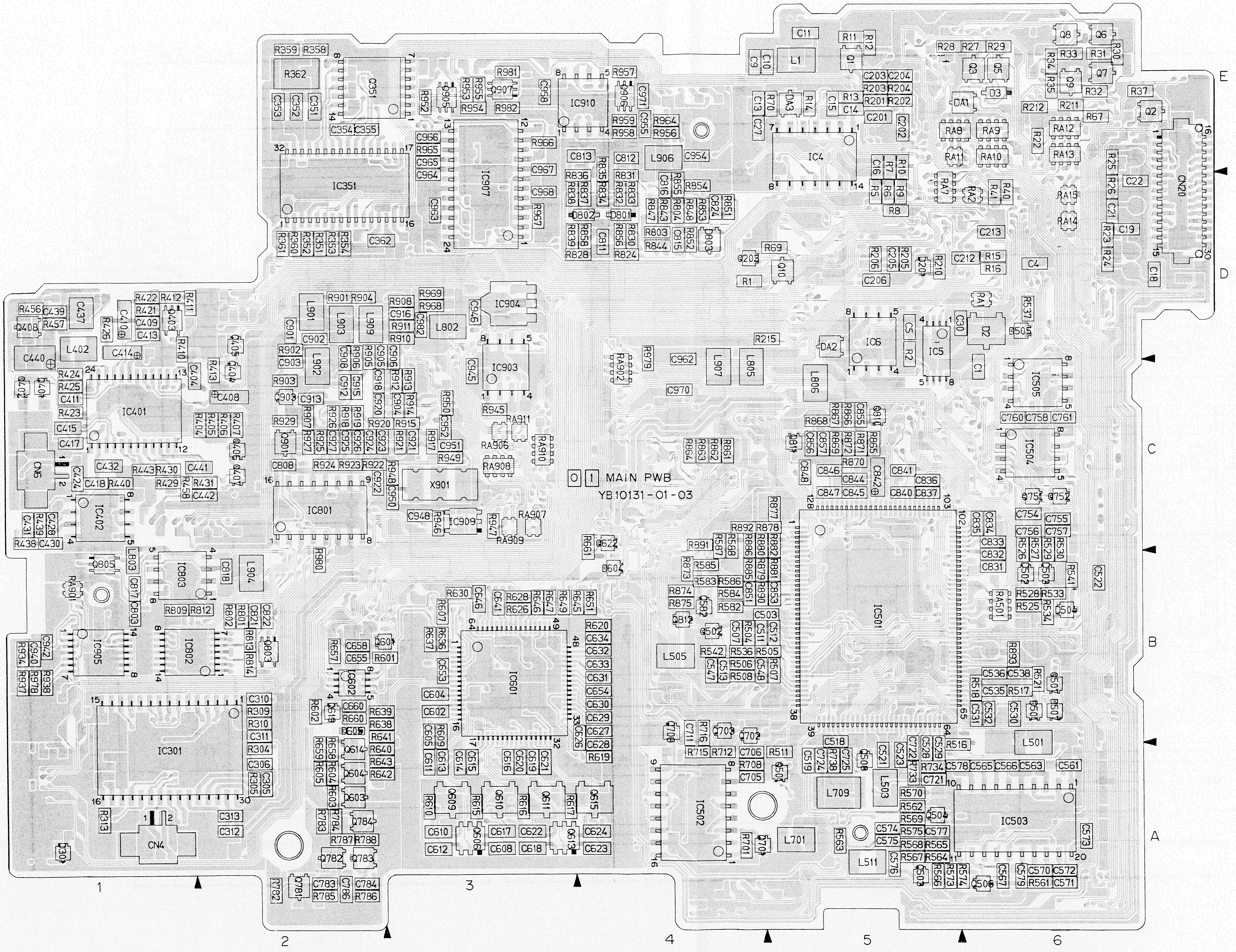
4.10 PRE/REC SCHEMATIC DIAGRAM



01 MAIN(PRE/REC)
NOTE: Mark(*)is not used.
IC601 AN3352FHP
IC603 MM1165ZM
IC602 TC7WU04FU
D603 DAN222
D604 DAP222
D601 MA132WA
D602 DA227
Q601 DTC144EE
Q603 2SA1577(QR)
Q604 2SA1577(QR)
Q605 UMG2N
Q606 XN4504
Q609 2SC2412K(QR)
Q610 2SC2412K(QR)
Q611 2SC2412K(QR)
Q613 XN4504
Q614 2SA1577(QR)
Q615 2SC2412K(QR)
Q616 2SA1577(QR)
Q617 2SC4617(QRS)
Q619 2SC4617(QRS)
Q620 2SC4617(QRS)
Q621 DTC144EE
Q622 DTA144EE
A LOGIC
V LOGIC
A AMP
A GCA
Y GCA
C GCA
C AMP
AGC
ARA1
ARA2
ARA3
ARA4
AHA1 AHA3
AHA2 AHA4
HA3 HA1
HA4 HA2
RA1
RA2
RA3
RA4
TP602
TO SYSCON (Page 4-14)
H.REC_MUTE SP1 NC
A.HFF SP2
A.OVL SP3
V.REC_MUTE SP4
V.HFF SP5
V.OVL SP6
V.REC(L) SP7
SP(L) SP11 NC
V.PB(L) SP10
A.FF SP8
V.FF SP9
CN19
TO Hi-Fi AUDIO CN1 (Page 4-38)
A.GND(FM) 1
A.PB_FM 2
A.REC_FM 3
CN20
JIG CONNECTOR
V TP FM 2
A TP FM 3
A.REC_FM 14
REC_FM_1 6
NC 7
GND
D.REG 5V
TO PROCESS & Y/C (Page 4-21)
HIFI_REC_LEV YP3
V.REC_COL YP2
V.PB_COL PY2
V.REC_FM YP1
V.PB_FM PY1
CN2
TO R/TRANS
1 FE(F)
2 FE(S)
3 GND
4 A_CH2(S)
5 A_CH2(F)
6 A_4CH(F)
7 A_4CH(S)
8 A_1CH(F)
9 A_1CH(S)
10 A_3CH(S)
11 A_3CH(F)
12 GND
13 V_3CH(F)
14 V_3CH(S)
15 V_1CH(S)
16 V_1CH(F)
17 V_4CH(F)
18 V_4CH(S)
19 V_2CH(S)
20 V_2CH(F)
A
B
C
D
E
F
G
H
1
2
3
4
5

4.11 MAIN CIRCUIT BOARD

FOIL SIDE (B)

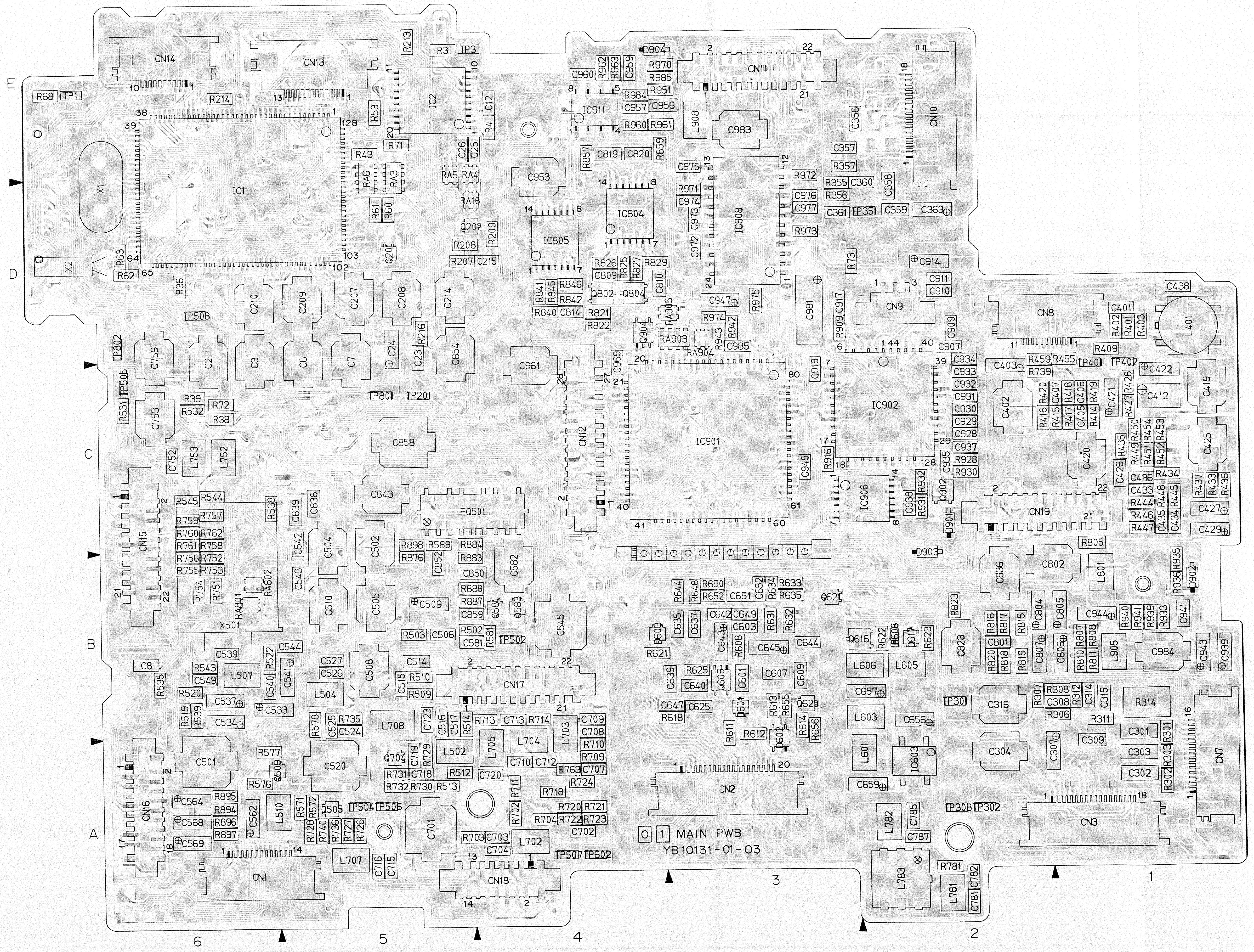

01 MAIN PWB
YB10131-01-03
IC301
IC351
IC401
IC402
IC4
IC5
IC6
IC501
IC502
IC503
IC504
IC505
IC601
IC801
IC802
IC803
IC903
IC904
IC905
IC907
IC909
IC910
X901
CN4
CN6
CN20
L1
L402
L501
L503
L505
L511
L701
L709
L802
L805
L806
L901
L902
L903
L904
L906
L907
L909
E
D
C
B
A
1
2
3
4
5
6

PARTS LOCATION GUIDE <MAIN BOARD>

REF.No.	LOCATION	REF.No.	LOCATION	REF.No.	LOCATION	REF.No.	LOCATION	REF.No.	LOCATION	REF.No.	LOCATION	REF.No.	LOCATION	REF.No.	LOCATION
IC		Q706	A-4B	R62	A-6D	R443	B-1C	R607	B-3B	R757	A-6C	R879	B-4B	R972	A-3D
IC1	A-6D	Q751	B-6C	R63	A-6D	R444	A-1C	R608	A-3B	R758	A-6C	R880	B-4C	R973	A-3D
IC2	A-5E	Q752	B-6C	R67	B-6E	R445	A-1C	R609	B-3B	R759	A-6C	R881	B-5B	R974	A-3D
IC4	B-5E	Q781	B-2A	R68	A-6E	R446	A-1C	R610	B-3A	R760	A-6C	R882	B-5C	R975	A-3D
IC5	B-5D	Q782	B-2A	R69	B-5D	R447	A-1C	R611	A-3B	R761	A-6C	R883	A-5B	R978	B-1B
IC6	B-5D	Q783	B-2A	R70	B-4E	R448	A-1C	R612	A-3B	R762	A-6C	R884	A-5C	R979	B-4D
IC301	B-1A	Q784	B-2A	R71	A-5E	R449	A-1C	R613	A-3B	R763	A-4B	R885	B-4B	R980	B-2B
IC351	B-2D	Q802	A-4D	R72	A-6D	R450	A-1C	R614	A-3B	R781	A-2A	R886	B-4C	R981	B-3E
IC401	B-1C	Q803	B-2B	R73	A-3D	R451	A-1C	R615	B-3A	R782	B-2A	R887	A-5B	R982	B-3E
IC402	B-1C	Q804	A-4D	R201	B-5E	R452	A-1C	R616	B-3A	R783	B-2A	R888	A-5B	R984	A-4E
IC501	B-5B	Q805	B-1B	R202	B-5E	R453	A-1C	R617	B-3A	R784	B-2A	R890	B-4B	R985	A-4E
IC502	B-4A	Q810	B-5C	R203	B-5E	R454	A-1C	R618	A-3B	R785	B-2A	R891	B-4C	NETWORK RESISTOR	
IC503	B-6A	Q811	B-5C	R204	B-5E	R455	A-1D	R619	B-4A	R786	B-2A	R892	B-4C		
IC504	B-6C	Q812	B-4B	R205	B-5D	R456	B-1D	R620	B-4B	R787	B-2A	R893	B-6B	RA1	B-6D
IC505	B-6C	Q901	B-2C	R206	B-5D	R457	B-1D	R621	A-4B	R788	B-2A	R894	A-6A	RA2	B-6D
IC601	B-3B	Q902	A-2C	R207	A-5D	R458	B-1C	R622	A-2B	R801	B-2B	R895	A-6A	RA3	A-5D
IC602	B-2B	Q903	B-2C	R208	A-5D	R459	A-2D	R623	A-2B	R802	B-2B	R896	A-6A	RA4	A-4E
IC603	A-2A	Q904	A-4D	R209	A-4D	R502	A-5B	R625	A-3B	R803	B-4D	R897	A-6A	RA5	A-5E
IC801	B-2C	Q905	B-3E	R210	B-5D	R503	A-5B	R626	B-3B	R804	B-4D	R898	A-5C	RA6	A-5D
IC802	B-1B	Q906	B-4E	R211	B-6E	R504	B-4B	R628	B-3B	R805	A-1C	R901	B-2D	RA7	B-5D
IC803	B-1B	Q907	B-3E	R212	B-6E	R505	B-4B	R630	B-3B	R807	A-1B	R902	B-2D	RA8	B-5E
IC804	A-4D	DIODE		R213	A-5E	R506	B-4B	R631	A-3B	R808	A-1B	R903	B-2C	RA9	B-6E
IC805	A-4D	D2	B-6D	R214	A-6E	R507	B-5B	R632	A-3B	R809	B-1B	R904	B-2D	RA10	B-6E
IC901	A-3C	D3	B-6E	R215	B-4D	R508	B-4B	R633	A-3B	R810	A-1B	R905	B-2D	RA11	B-5E
IC902	A-2C	D201	B-5D	R216	A-5D	R509	A-5B	R634	A-3B	R811	A-1B	R906	B-2D	RA12	B-6E
IC903	B-3D	D301	B-1A	R301	A-1B	R510	A-5B	R635	A-3B	R812	B-2B	R907	B-2C	RA13	B-6E
IC904	B-3D	D501	B-6B	R302	A-1A	R511	B-5A	R636	B-3B	R813	B-2B	R908	B-3D	RA14	B-6D
IC905	B-1B	D502	B-6B	R303	A-1A	R512	A-5A	R637	B-3B	R814	B-2B	R909	A-3D	RA15	B-6D
IC906	A-2C	D503	B-6B	R304	B-2A	R513	A-5A	R638	B-2B	R815	A-2B	R910	B-3D	RA16	A-4D
IC907	B-3D	D504	B-6B	R305	B-2A	R514	A-5B	R639	B-2B	R816	A-2B	R911	B-3D	RA501	B-6B
IC908	A-3D	D505	B-6D	R306	A-1B	R516	B-5A	R640	B-2A	R817	A-2B	R912	B-3C	RA801	A-6B
IC909	B-3C	D507	B-6B	R307	A-2B	R517	B-6B	R641	B-2B	R818	A-2B	R913	B-3C	RA802	A-6B
IC910	B-4E	D601	A-3B	R308	A-1B	R518	B-6B	R642	B-2A	R819	A-2B	R914	B-3C	RA901	B-1B
IC911	A-4E	D602	A-3A	R309	B-2B	R519	A-6B	R643	B-2A	R820	A-2B	R915	B-3C	RA902	B-4C
TRANSISTOR		D603	A-4B	R310	B-2B	R520	A-6B	R644	A-3B	R821	A-4D	R916	A-3C	RA903	A-3D
Q1	B-5E	D604	B-4B	R311	A-1B	R521	B-6B	R645	B-3B	R822	A-4D	R917	B-3C	RA904	A-3D
Q2	B-6E	D605	B-2B	R312	A-1B	R522	A-6B	R646	B-3B	R823	A-2B	R918	B-2C	RA905	A-3D
Q3	B-6E	D606	A-2B	R313	B-1A	R525	B-6B	R647	B-3B	R824	B-4D	R919	B-2C	RA906	B-3C
Q5	B-6E	D801	B-4D	R314	A-1B	R526	B-6C	R648	A-3B	R825	A-4D	R920	B-2C	RA907	B-3C
Q6	B-6E	D802	B-4D	R351	B-2D	R527	B-6C	R649	B-3B	R826	A-4D	R921	B-3C	RA908	B-3C
Q7	B-6E	D803	B-4D	R352	B-2D	R528	B-6B	R650	A-3B	R827	A-4D	R922	B-2C	RA909	B-3C
Q8	B-6E	D901	A-2C	R353	B-2D	R529	B-6C	R651	B-4B	R828	B-3D	R923	B-2C	RA910	B-3C
Q9	B-6E	D902	A-1B	R354	B-2D	R530	B-6C	R652	A-3B	R829	A-4D	R924	B-2C	RA911	B-3C
Q10	B-5D	D903	A-2B	R355	A-3D	R531	A-6C	R655	A-3B	R830	B-4D	R925	B-2C	CAPACITOR	
Q201	A-5D	D904	A-4E	R356	A-3D	R532	A-6C	R656	A-3B	R831	B-4D	R926	B-2C	C1	B-6C
Q202	A-4D	DA1	B-5E	R357	A-3E	R533	B-6B	R657	B-2B	R832	B-4D	R927	B-2C	C2	A-6D
Q203	B-4D	DA2	B-5D	R358	B-2E	R534	B-6B	R658	B-2A	R833	B-4D	R928	A-2C	C3	A-6D
Q351	B-2E	DA3	B-5E	R359	B-2E	R535	A-6B	R659	B-2A	R834	B-4D	R829	B-2C	C4	B-6D
Q401	B-1C	RESISTOR		R360	B-2D	R536	B-4B	R660	B-2B	R835	B-4E	R930	A-2C	C5	B-5D
Q402	B-1C	R1	B-4E	R361	B-2D	R537	B-6D	R661	B-4C	R836	B-4D	R931	A-2C	C6	A-5D
Q403	B-1D	R2	B-5D	R362	B-2E	R538	A-6C	R701	B-4A	R837	B-4D	R932	A-2C	C7	A-5D
Q404	B-2C	R3	A-5E	R401	A-1D	R539	A-6B	R702	A-4A	R838	B-5D	R933	A-1B	C8	A-6B
Q405	B-2D	R4	A-4E	R402	A-1D	R541	B-6B	R703	A-4A	R839	B-3D	R934	B-1B	C9	B-4E
Q406	B-2C	R5	B-5D	R403	A-1D	R542	B-4B	R704	A-4A	R840	A-4D	R935	A-1B	C10	B-4E
Q407	B-2C	R6	B-5D	R404	B-2C	R543	A-6B	R708	B-4A	R841	A-4D	R936	A-1B	C11	B-6D
Q408	B-1D	R7	B-5E	R405	B-2C	R544	A-6C	R709	A-4A	R842	A-4D	R937	B-1B	C12	A-4E
Q501	B-5A	R8	B-5D	R406	B-2C	R545	A-6C	R710	A-4A	R843	B-4D	R938	B-1B	C13	B-4E
Q502	B-4B	R9	B-5D	R407	B-2C	R561	B-6A	R711	A-4A	R844	B-4B	R939	A-1B	C14	B-6D
Q503	B-5A	R10	B-5E	R409	A-1D	R562	B-5A	R712	B-4A	R845	A-4D	R940	A-1B	C15	B-6D
Q504	B-5A	R11	B-5E	R410	B-1D	R563	B-5A	R713	A-4B	R846	A-4D	R941	A-1B	C16	B-5E
Q505	A-5A	R12	B-5E	R411	B-1D	R564	B-5A	R714	A-4B	R847	B-4D	R942	A-3D	C18	B-6D
Q506	B-6A	R13	B-5E	R412	B-1D	R565	B-5A	R715	B-4A	R848	B-4D	R943	A-3D	C19	B-6D
Q507	B-6B	R14	B-5E	R413	B-2D	R566	B-5A	R716	B-4B	R851	B-4D	R945	B-3C	C21	B-6D
Q508	B-5A	R15	B-6D	R414	A-1C	R567	B-5A	R718	A-4A	R852	B-4D	R946	B-3C	C22	B-6D
Q509	A-6A	R16	B-6D	R415	A-1C	R568	B-5A	R720	A-4A	R853	B-4D	R947	B-3C	C23	A-5D
Q581	A-4B	R22	B-6E	R416	A-2C	R569	B-5A	R721	A-4A	R854	B-4D	R948	B-3C	C24	A-5D
Q582	A-4B	R23	B-6D	R417	A-1C	R570	B-5A	R722	A-4A	R855	B-4D	R949	B-3C	C25	A-4E
Q583	A-4B	R24	B-6D	R418	A-1C	R571	A-5A	R723	A-4A	R856	B-4D	R950	B-3C	C26	A-5E
Q601	B-2B	R25	B-6E	R419	A-1C	R572	A-5A	R724	A-4A	R857	A-4E	R951	A-4E	C27	B-4E
Q603	B-2A	R26	B-6D	R420	A-2C	R573	B-5A	R726	A-5A	R858	B-4D	R952	B-3E	C30	B-5C
Q604	B-2A	R27	B-6E	R421	B-1D	R574	B-6A	R727	A-5A	R859	A-4E	R953	B-3E	C201	B-5E
Q605	A-3B	R28	B-5E	R422	B-1D	R575	B-5A	R728	A-5A	R861	B-4C	R954	B-3E	C202	B-5E
Q606	B-3A	R29	B-6E	R423	B-1C	R576	A-6A	R729	A-5A	R862	B-4C	R955	B-3E	C203	B-5E
Q609	B-3A	R30	B-6E	R424	B-1C	R577	A-6A	R730	A-5A	R863	B-4C	R956	B-4E	C204	B-5E
Q610	B-3A	R31	B-6E	R425	B-1C	R578	A-5B	R731	A-5A	R864	B-4C	R957	B-4E	C205	B-5D
Q611	B-3A	R32	B-6E	R426	B-1D	R581	A-4B	R732	A-5A	R865	B-5C	R958	B-4E	C206	B-5D
Q613	B-3A	R33	B-6E	R427	A-1C	R582	B-4B	R733	B-5A	R866	B-5C	R959	B-4E	C207	A-5D
Q614	B-2A	R34	B-6E	R428	A-1C	R583	B-4B	R734	B-5A	R867	B-5C	R960	A-4E	C208	A-5D
Q615	B-4A	R35	B-6E	R429	B-1C	R584	B-4B	R735	A-5B	R868	B-5C	R961	A-4E	C209	A-5D
Q616	A-2B	R36	A-6D	R430	B-1C	R585	B-4B	R736	A-5A	R869	B-5C	R962	A-4E	C210	A-6D
Q617	A-2B	R37	B-6E	R431	B-2C	R586	B-4B	R738	B-5A	R870	B-5C	R963	A-4E	C212	B-6D
Q619	B-2B	R38	A-6D	R433	A-1C	R587	B-4C	R739	A-2C	R871	B-5C	R964	B-4E	C213	B-6D
Q620	A-3B	R39	A-6D	R434	A-1C	R588	B-4C	R740	A-5A	R872	B-5C	R965	B-3E	C214	A-5D
Q621	A-3B	R40	B-6D	R435	A-1C	R589	A-5C	R751	A-6B	R873	B-4B	R966	B-3E	C215	A-4D
Q622	B-4C	R41	B-6D	R436	A-1C	R601	B-2B	R752	A-6B	R874	B-4B	R967	B-3D	C301	A-1B
Q701	B-4A	R43	A-5E	R437	A-1C	R602	B-2B	R753	A-6B	R875	B-4B	R968	B-3D	C302	A-1A
Q702	A-4B	R53	A-5E	R438	B-1C	R603	B-2A	R754	A-6B	R876	A-5B	R969	B-3D	C303	A-1A
Q703	A-4B	R60	A-5D	R439	B-1C	R604	B-2A	R755	A-6B	R877	B-5C	R970	A-4E	C304	A-2A
Q704	A-5A	R61	A-5D	R440	B-1C	R605	B-2A	R756	A-6B	R878	B-5C	R971	A-3D	C305	B-2A

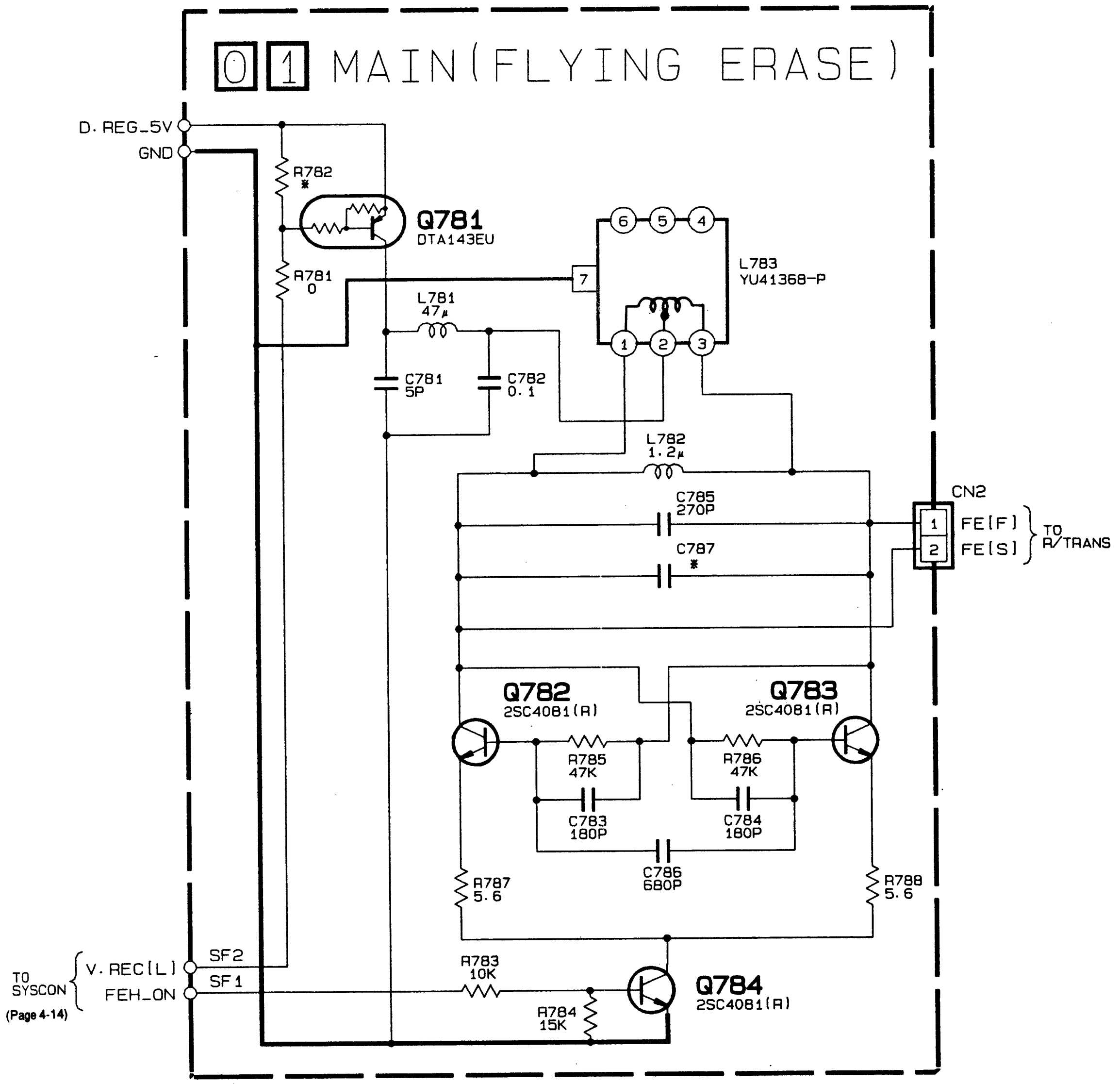
REF.No.	LOCATION	REF.No.	LOCATION	REF.No.	LOCATION	REF.No.	LOCATION	REF.No.	LOCATION	REF.No.	LOCATION
C306	B-2A	C526	A-5B	C651	A-3B	C846	B-5C	C977	A-3D	TP602	A-4A
C307	A-1A	C527	A-5B	C652	A-3B	C847	B-5C	C981	A-3C	TP801	A-5C
C308	A-1B	C528	B-5A	C653	B-3B	C848	B-5C	C982	B-3D	TP802	A-4D
C309	A-1A	C529	B-5A	C654	B-4B	C850	A-4B	C983	A-3E		
C310	B-2B	C530	B-6B	C655	B-2B	C851	B-5B	C984	A-1B		
C311	B-2B	C531	B-6B	C656	A-2B	C852	A-5B	C985	A-3D		
C312	B-2A	C532	B-6B	C657	A-2B	C853	B-5B	COIL			
C313	B-2A	C533	A-6B	C658	B-2B	C854	A-5D	L1	B-5E		
C314	A-1B	C534	A-6B	C659	A-2A	C855	B-5C	L401	A-1D		
C315	A-1B	C535	B-6B	C660	B-2B	C856	B-5C	L402	B-1D		
C316	A-2B	C536	B-6B	C701	A-5A	C857	B-5C	L501	B-6A		
C351	B-2E	C537	A-6B	C702	A-4A	C858	A-5C	L502	A-5A		
C352	B-2E	C538	B-6B	C703	A-4A	C859	A-5B	L503	B-5A		
C353	B-2E	C539	A-6B	C704	A-4A	C901	B-2D	L504	A-5B		
C354	B-2E	C540	A-6B	C705	B-4A	C902	B-2D	L505	B-4B		
C355	B-2E	C541	A-5B	C706	B-4A	C903	B-2D	L507	A-6B		
C356	A-3E	C542	A-5C	C707	A-4A	C904	B-3C	L510	A-6A		
C357	A-3E	C543	A-5B	C708	A-4B	C905	B-2D	L511	B-5A		
C358	A-2D	C544	A-5B	C709	A-4B	C906	B-3D	L601	A-2A		
C359	A-2D	C545	A-4B	C710	A-4A	C907	A-2D	L603	A-2B		
C360	A-2D	C547	B-4B	C711	B-4B	C908	B-2D	L605	A-2B		
C361	A-3D	C548	B-4B	C712	A-4A	C909	A-2D	L606	A-2B		
C362	B-2D	C549	A-6B	C713	A-4B	C910	A-2D	L701	B-5A		
C363	A-2D	C561	B-6A	C715	A-5A	C911	A-2D	L702	A-4A		
C401	A-1D	C562	A-6A	C716	A-5A	C912	B-2C	L703	A-4B		
C402	A-2C	C563	B-6A	C718	A-5A	C913	B-2C	L704	A-4A		
C403	A-2C	C564	A-6A	C719	A-5A	C914	A-2D	L705	A-4A		
C404	B-2C	C565	B-6A	C720	A-4A	C915	B-2C	L707	A-5A		
C405	A-1C	C566	B-6A	C721	B-5A	C916	B-3D	L708	A-5B		
C406	A-1C	C567	B-6A	C722	B-5A	C917	A-3C	L709	B-5A		
C407	A-1C	C568	A-6A	C723	A-5B	C918	B-2C	L752	A-6C		
C408	B-2C	C569	A-6A	C724	B-5A	C919	A-3C	L753	A-6C		
C409	B-1D	C570	B-6A	C725	B-5A	C920	B-2C	L781	A-2A		
C410	B-1D	C571	B-6A	C752	A-6C	C921	B-2C	L782	A-2A		
C411	B-1C	C572	B-6A	C753	A-6C	C922	B-2C	L783	A-2A		
C412	A-1C	C573	B-6A	C754	B-6C	C923	B-2C	L801	A-1B		
C413	B-1D	C574	B-5A	C755	B-6C	C924	B-2C	L802	B-3D		
C414	B-1D	C575	B-5A	C756	B-6C	C925	B-2C	L803	B-1B		
C415	B-1C	C576	B-5A	C757	B-6C	C926	B-2C	L805	B-4C		
C417	B-1C	C577	B-5A	C758	B-6C	C927	B-2C	L806	B-5C		
C418	B-1C	C578	B-6A	C759	A-6D	C928	A-2C	L901	B-2C		
C419	A-1C	C579	B-6A	C760	B-6C	C929	A-2C	L902	B-2C		
C420	A-1C	C581	A-5B	C761	B-6C	C930	A-2C	L903	B-2C		
C421	A-1C	C582	A-4B	C781	A-2A	C931	A-2C	L904	B-2B		
C422	A-1C	C601	A-3B	C782	A-2A	C932	A-2C	L905	A-1B		
C424	B-1C	C602	B-3B	C783	B-2A	C933	A-2C	L906	B-4E		
C425	A-1C	C603	A-3B	C784	B-2A	C934	A-2C	L907	B-4C		
C426	A-1C	C604	B-3B	C785	A-2A	C935	A-2C	L908	A-3E		
C427	A-1C	C605	B-3B	C786	B-2A	C936	A-2B	L909	B-2C		
C428	B-1C	C607	A-3B	C787	A-2A	C937	A-2C	EQUALIZER			
C429	A-1C	C608	B-3A	C801	A-2B	C938	A-2C	EQ501	A-4C		
C430	B-1C	C609	A-3B	C802	A-1B	C939	A-1B	RESONATOR			
C431	B-1C	C610	B-3A	C803	B-1B	C940	B-1B	X901	B-3C		
C432	B-1C	C611	B-3A	C804	A-2B	C941	A-1B	CONNECTOR			
C433	A-1C	C612	B-3A	C805	A-1B	C942	B-1B	CN1	A-6A		
C434	A-1C	C613	B-3A	C806	A-1B	C943	A-1B	CN2	A-3A		
C435	A-1C	C614	B-3A	C807	A-2B	C944	A-1B	CN3	A-1A		
C436	A-1C	C615	B-3A	C808	B-2C	C945	B-3C	CN4	B-1A		
C437	B-1D	C616	B-3A	C809	A-4D	C946	B-3D	CN6	B-1C		
C438	A-1D	C617	B-3A	C810	A-4D	C947	A-3D	CN7	A-1A		
C439	B-1D	C618	B-3A	C811	B-4D	C958	B-3C	CN8	A-2D		
C440	B-1D	C619	B-3A	C812	B-4E	C949	A-3C	CN9	A-2D		
C441	B-2C	C620	B-3A	C813	B-4E	C950	B-3C	CN10	A-2E		
C442	B-2C	C621	B-3A	C814	A-4D	C951	B-3C	CN11	A-3E		
C501	A-6A	C622	B-3A	C815	B-4D	C952	B-3C	CN12	A-4C		
C502	A-5C	C623	B-4A	C816	B-4D	C953	A-4D	CN13	A-5A		
C503	B-4B	C624	B-4A	C817	B-1B	C954	B-4E	CN14	A-6A		
C504	A-5C	C625	A-3B	C818	B-2B	C955	B-4E	CN15	A-6C		
C505	A-5B	C626	B-4B	C819	A-4E	C956	A-4E	CN16	A-6A		
C506	A-5B	C627	B-4B	C820	A-4E	C957	A-4E	CN17	A-4B		
C507	B-4B	C628	B-4A	C821	B-2B	C958	B-3E	CN18	A-4A		
C508	A-5B	C629	B-4B	C822	B-2B	C959	A-4E	CN19	A-2C		
C509	A-5B	C630	B-4B	C823	A-2B	C960	A-4E	CN20	B-6D		
C510	A-5B	C631	B-4B	C824	B-4D	C961	A-4C	TEST PIN			
C511	B-4B	C632	B-4B	C831	B-6B	C962	B-4D	TP1	A-6E		
C512	B-5B	C633	B-4B	C832	B-6B	C963	B-3D	TP3	A-4E		
C513	B-4B	C634	B-4B	C833	B-6C	C964	B-3E	TP201	A-5C		
C514	A-5B	C635	A-3B	C834	B-6C	C965	B-3E	TP301	A-2B		
C515	A-5B	C637	A-3B	C835	B-6C	C966	B-3E	TP302	A-2A		
C516	A-5B	C639	A-3B	C836	B-5C	C967	B-3E	TP303	A-2A		
C517	A-5B	C640	A-3B	C837	B-5C	C968	B-3D	TP351	A-2D		
C518	B-5A	C641	B-3B	C838	A-5C	C969	A-3C	TP401	A-1C		
C519	B-5A	C642	A-3B	C839	A-5C	C970	B-4C	TP402	A-1C		
C520	A-5A	C643	A-3B	C840	B-5C	C971	B-4E	TP502	A-4B		
C521	B-5A	C644	A-3B	C841	B-5C	C972	A-3D	TP504	A-5A		
C522	B-6B	C645	A-3B	C842	B-5C	C973	A-3D	TP505	A-6C		
C523	B-5A	C646	B-3B	C843	A-5C	C974	A-3D	TP506	A-5A		
C524	A-5B	C647	A-3B	C844	B-5C	C975	A-3E	TP507	A-4A		
C525	A-5B	C649	A-3B	C845	B-5C	C976	A-3D	TP508	A-6D		

COMPONENT SIDE (A)


MAIN PWB
YB10131-01-03
IC1
IC2
IC603
IC804
IC805
IC901
IC902
IC906
IC908
IC911
CN1
CN2
CN3
CN7
CN8
CN9
CN10
CN11
CN12
CN13
CN14
CN15
CN16
CN17
CN18
CN19
EQ501
X1
X2
X501
L401
A
B
C
D
E
1
2
3
4
5
6

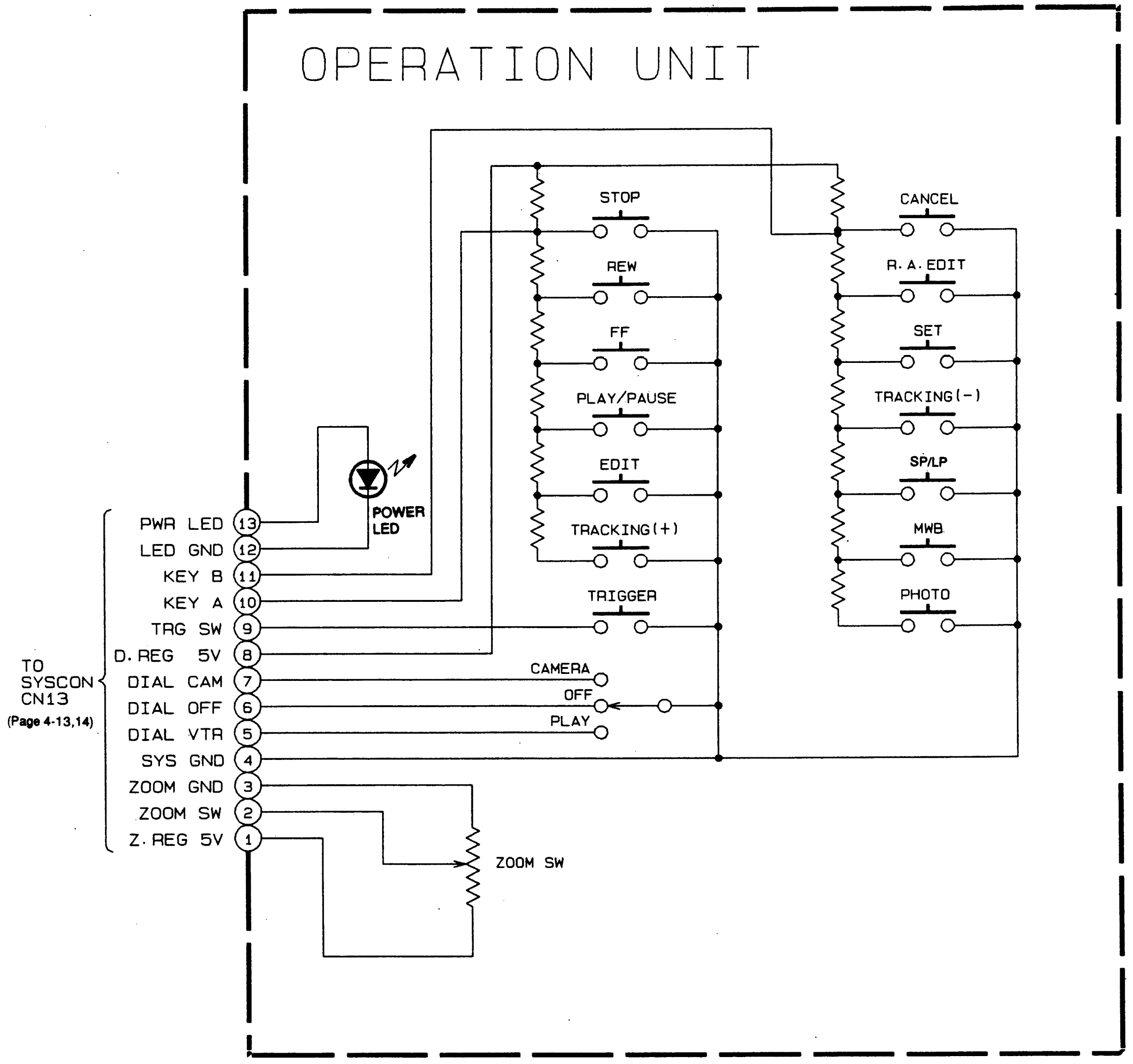
4.12 FLYING ERASE SCHEMATIC DIAGRAM

NOTE: Mark(※)is not used.

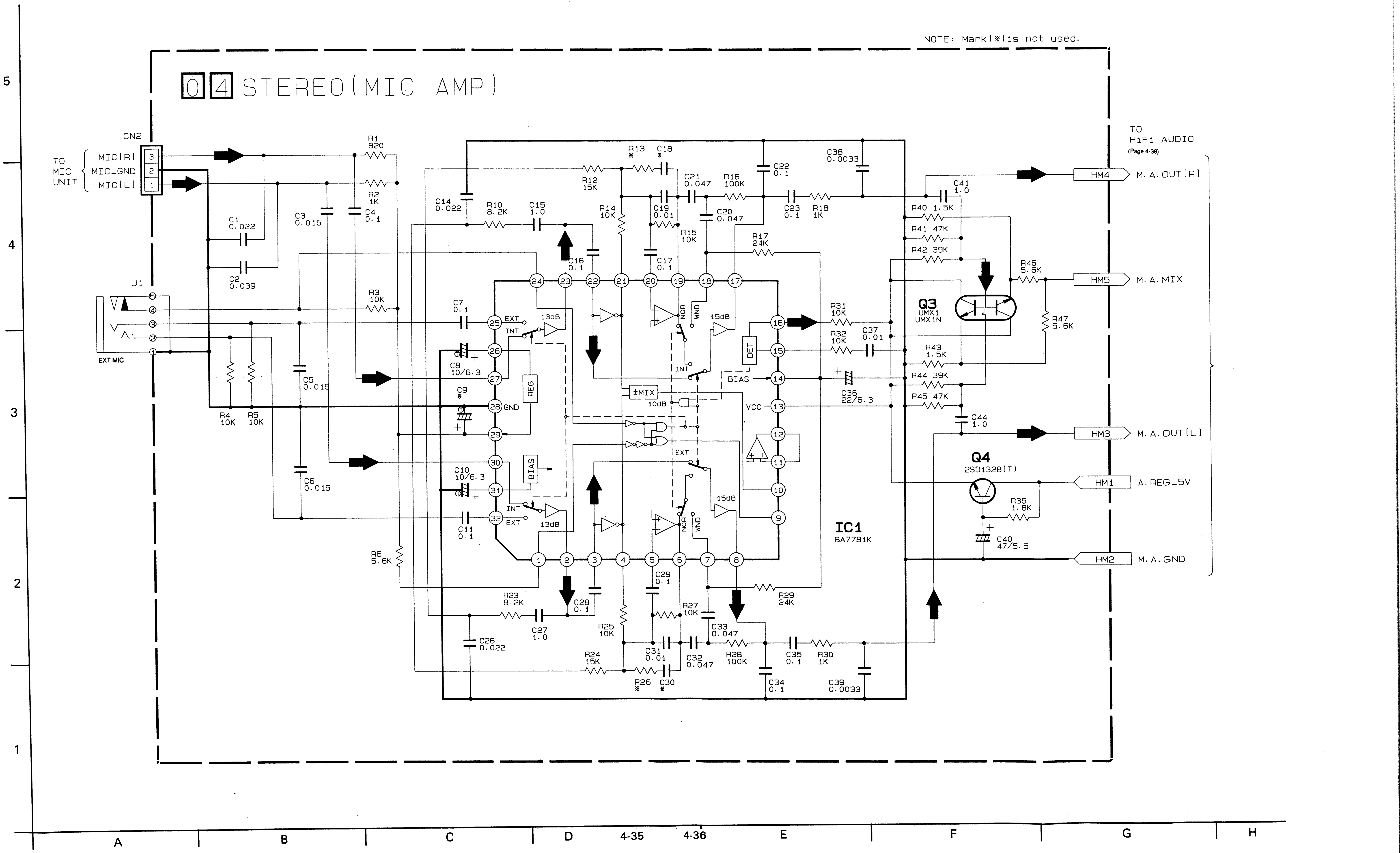

01 MAIN(FLYING ERASE)
D. REG_5V
GND
R782 ※
R781 0
Q781 DTA143EU
L781 47μ
C781 5P
C782 0.1
L783 YU41368-P
7
6 5 4
1 2 3
L782 1.2μ
C785 270P
C787 ※
CN2
1 FE(F)
2 FE(S)
TO R/TRANS
Q782 2SC4081(R)
Q783 2SC4081(R)
R785 47K
R786 47K
C783 180P
C784 180P
C786 680P
R787 5.6
R788 5.6
R783 10K
R784 15K
Q784 2SC4081(R)
TO SYSCON (Page 4-14)
V. REC(L)
FEH_ON
SF2
SF1

4.13 OPERATION UNIT SCHEMATIC DIAGRAM

NOTE: This schematic diagram is only for reference.
Avoid replacing individual parts.
Replace the entire unit only.

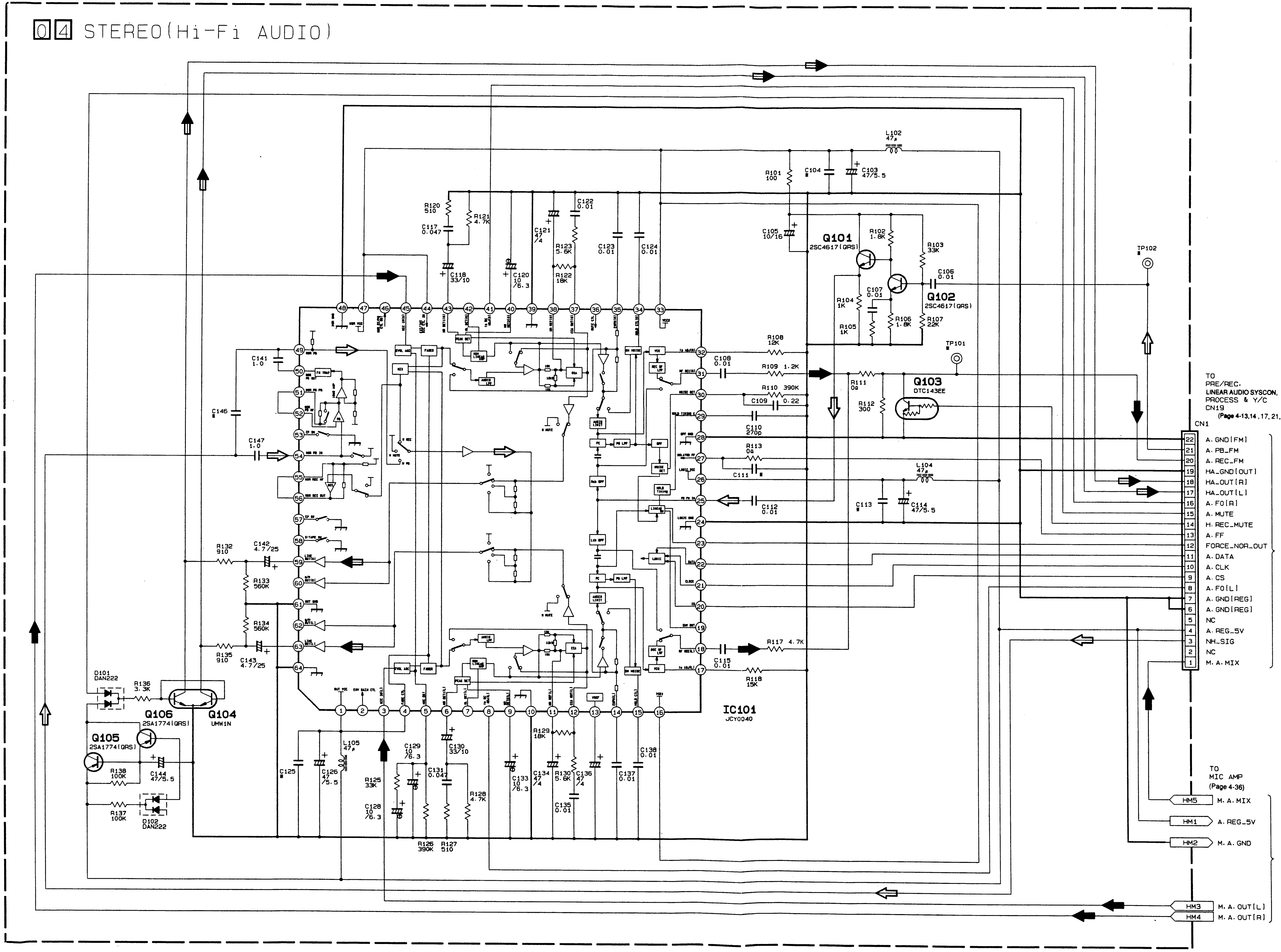

OPERATION UNIT
STOP
REW
FF
PLAY/PAUSE
EDIT
TRACKING(+)
TRIGGER
CANCEL
R. A. EDIT
SET
TRACKING(−)
SP/LP
MWB
PHOTO
POWER LED
CAMERA
OFF
PLAY
ZOOM SW
TO SYSCON CN13 (Page 4-13,14)
PWR LED 13
LED GND 12
KEY B 11
KEY A 10
TRG SW 9
D. REG 5V 8
DIAL CAM 7
DIAL OFF 6
DIAL VTR 5
SYS GND 4
ZOOM GND 3
ZOOM SW 2
Z. REG 5V 1

4.14 MIC AMP SCHEMATIC DIAGRAM


NOTE: Mark(※)is not used.
04 STEREO(MIC AMP)
CN2
TO MIC UNIT
MIC[R] 3
MIC_GND 2
MIC[L] 1
J1
EXT MIC
R1 820
R2 1K
C1 0.022
C2 0.039
C3 0.015
C4 0.1
R3 10K
R4 10K
R5 10K
C5 0.015
C6 0.015
R6 5.6K
C7 0.1
C8 10/6.3
C9 ※
C10 10/6.3
C11 0.1
C14 0.022
R10 8.2K
C15 1.0
C16 0.1
R12 15K
R13 ※
C18 ※
R14 10K
C19 0.01
R15 10K
C17 0.1
C21 0.047
R16 100K
C20 0.047
C22 0.1
C23 0.1
R18 1K
C38 0.0033
R17 24K
EXT
INT
13dB
REG
GND
BIAS
NOR
WND
15dB
±MIX
10dB
DET
BIAS
VCC
IC1
BA7781K
R23 8.2K
C27 1.0
C28 0.1
C26 0.022
R24 15K
R25 10K
R26 ※
C30 ※
C29 0.1
R27 10K
C31 0.01
C32 0.047
C33 0.047
R28 100K
R29 24K
C34 0.1
C35 0.1
R30 1K
C39 0.0033
R31 10K
R32 10K
C37 0.01
C36 22/6.3
Q3
UMX1
UMX1N
C41 1.0
R40 1.5K
R41 47K
R42 39K
R43 1.5K
R44 39K
R45 47K
C44 1.0
R46 5.6K
R47 5.6K
Q4
2SD1328(T)
R35 1.8K
C40 47/5.5
TO HiFi AUDIO
(Page 4-38)
HM4 M.A.OUT[R]
HM5 M.A.MIX
HM3 M.A.OUT[L]
HM1 A.REG_5V
HM2 M.A.GND
5
4
3
2
1
A
B
C
D
4-35
4-36
E
F
G
H

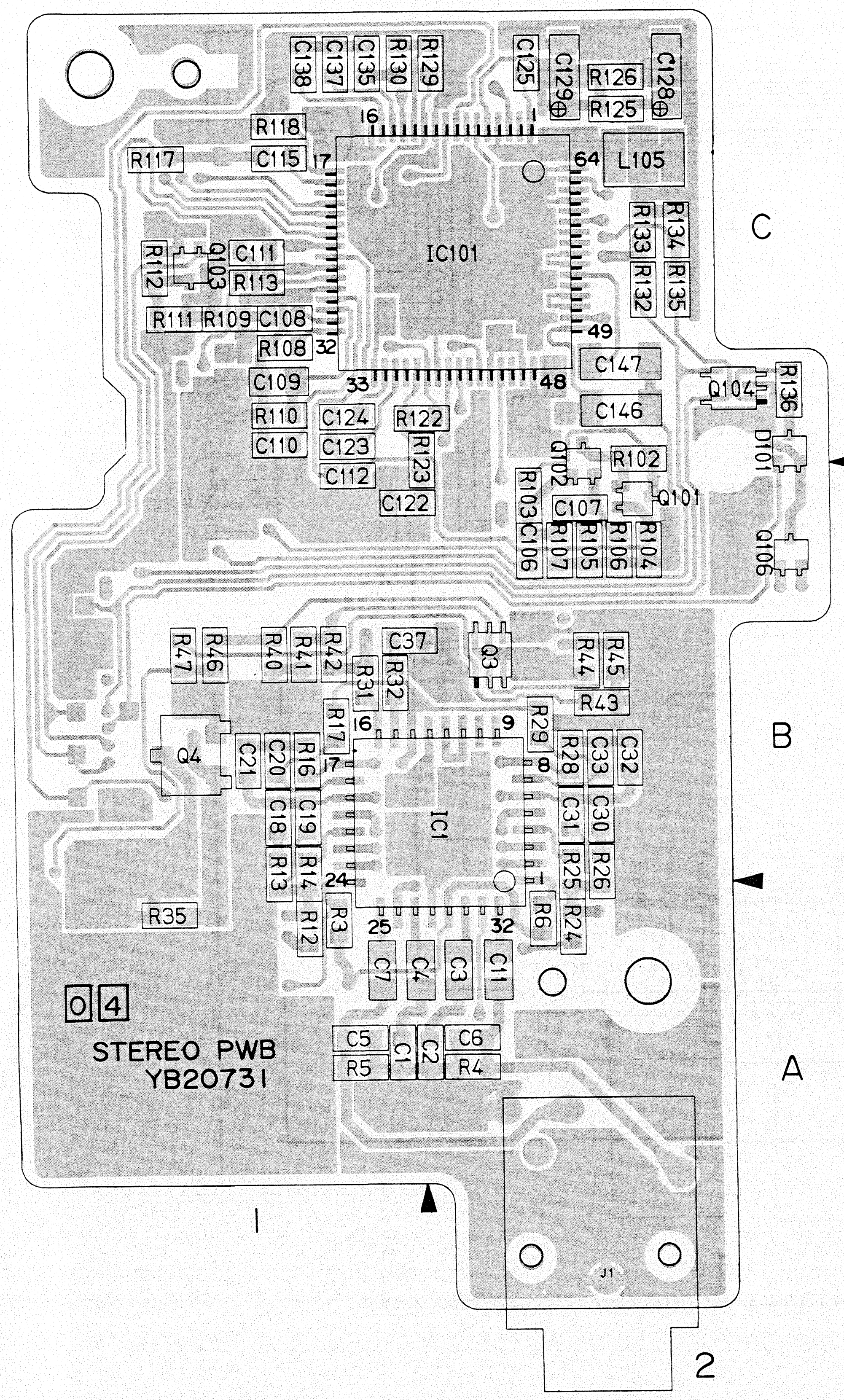
4.15 Hi-Fi AUDIO SCHEMATIC DIAGRAM

NOTE: Mark(※)is not used.

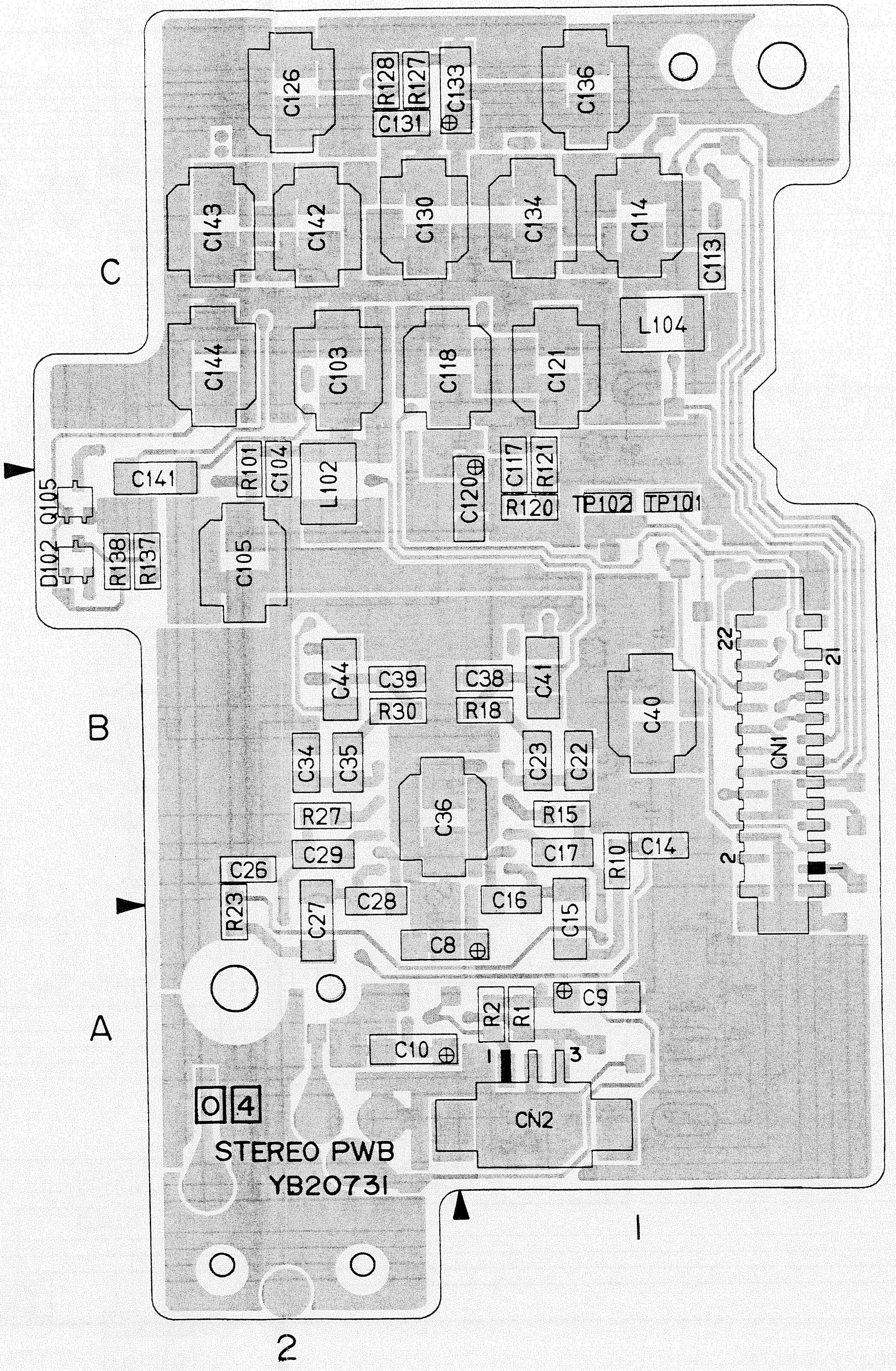

04 STEREO(Hi-Fi AUDIO)
IC101
JCY0040
Q101
2SC4617(QRS)
Q102
2SC4617(QRS)
Q103
DTC143EE
Q104
UMW1N
Q105
2SA1774(QRS)
Q106
2SA1774(QRS)
D101
DAN222
D102
DAN222
TP101
TP102
L102 47μ
L104 47μ
L105 47μ
R101 100
R102 1.8K
R103 33K
R104 1K
R105 1K
R106 1.8K
R107 22K
R108 12K
R109 1.2K
R110 390K
R111 0Ω
R112 300
R113 0Ω
R117 4.7K
R118 15K
R120 510
R121 4.7K
R122 18K
R123 5.6K
R125 33K
R126 390K
R127 510
R128 4.7K
R129 18K
R130 5.6K
R132 910
R133 560K
R134 560K
R135 910
R136 3.3K
R137 100K
R138 100K
C103 47/5.5
C104 ※
C105 10/16
C106 0.01
C107 0.01
C108 0.01
C109 0.22
C110 270p
C111 ※
C112 0.01
C113 ※
C114 47/5.5
C115 0.01
C117 0.047
C118 33/10
C120 10/6.3
C121 47/4
C122 0.01
C123 0.01
C124 0.01
C125 ※
C126 47/5.5
C128 10/6.3
C129 10/6.3
C130 33/10
C131 0.047
C133 10/6.3
C134 47/4
C135 0.01
C136 47/4
C137 0.01
C138 0.01
C141 1.0
C142 4.7/25
C143 4.7/25
C144 47/5.5
C146 ※
C147 1.0
TO
PRE/REC.
LINEAR AUDIO SYSCON,
PROCESS & Y/C
CN19
(Page 4-13,14,17,21,25)
CN1
22 A.GND(FM)
21 A.PB_FM
20 A.REC_FM
19 HA_GND(OUT)
18 HA_OUT(R)
17 HA_OUT(L)
16 A.FO(R)
15 A.MUTE
14 H.REC_MUTE
13 A.FF
12 FORCE_NOR_OUT
11 A.DATA
10 A.CLK
9 A.CS
8 A.FO(L)
7 A.GND(REG)
6 A.GND(REG)
5 NC
4 A.REG_5V
3 NH_SIG
2 NC
1 M.A.MIX
TO
MIC AMP
(Page 4-36)
HM5 M.A.MIX
HM1 A.REG_5V
HM2 M.A.GND
HM3 M.A.OUT(L)
HM4 M.A.OUT(R)
A
B
C
D
E
F
G
H
1
2
3
4
5

4.16 STEREO CIRCUIT BOARD

FOIL SIDE (B)



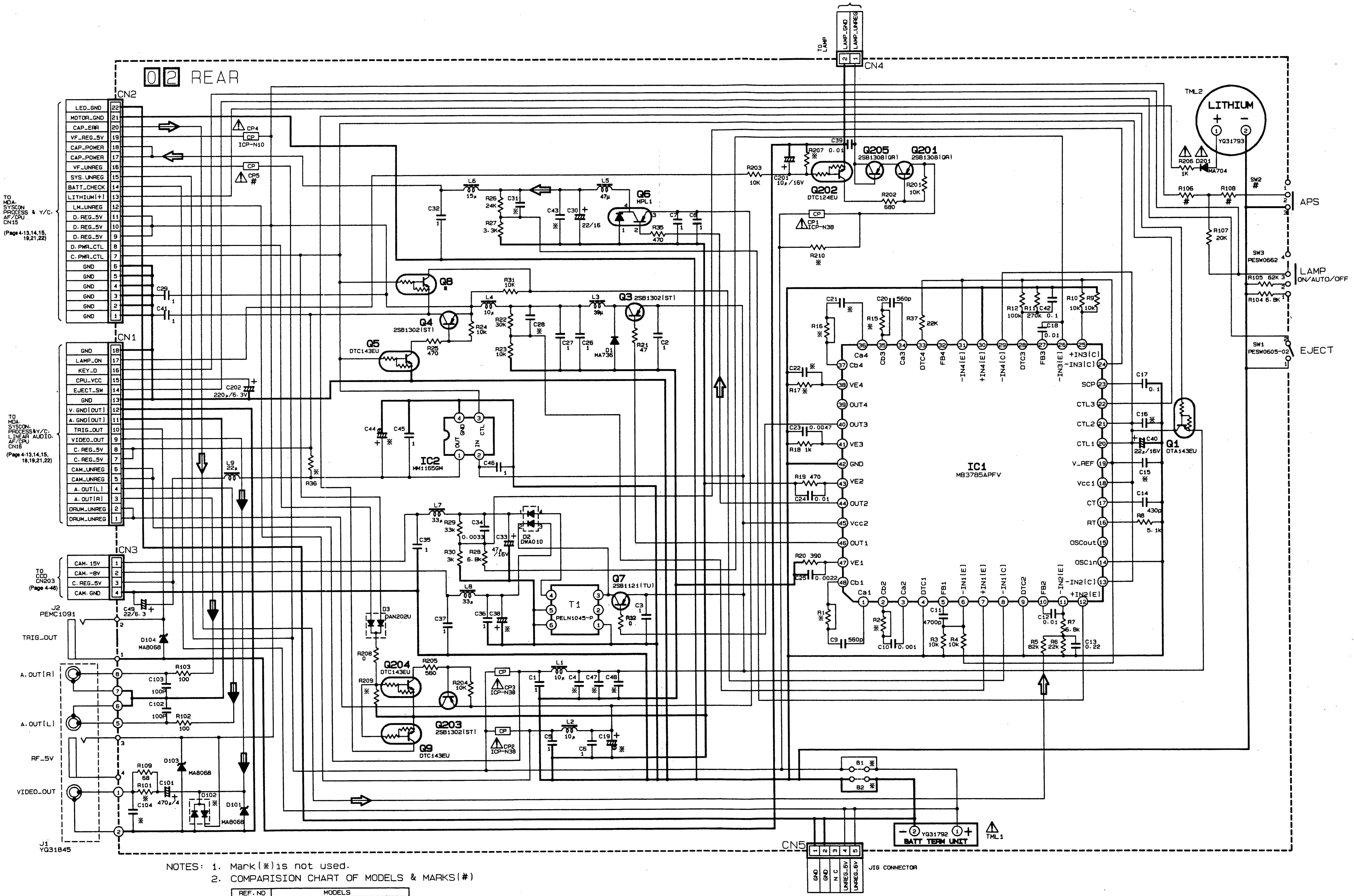
COMPONENT SIDE (A)



PARTS LOCATION GUIDE <STEREO BOARD>

REF.No.	LOCATION
IC	
IC1	B-2B
IC101	B-2C
TRANSISTOR	
Q3	B-2B
Q4	B-1B
Q101	B-2B
Q102	B-2B
Q103	B-1C
Q104	B-2C
Q105	A-2B
Q106	B-2B
DIODE	
D101	B-2C
D102	A-2B
RESISTOR	
R1	A-1A
R2	A-1A
R3	B-1A
R4	B-2A
R5	B-1A
R6	B-2A
R10	A-1B
R12	B-1A
R13	B-1B
R14	B-1B
R15	A-1B
R16	B-1B
R17	B-1B
R18	A-1B
R23	A-2A
R24	B-2A
R25	B-2B
R26	B-2B
R27	A-2B
R28	B-2B
R29	B-2B
R30	A-2B
R31	B-1B
R32	B-1B
R35	B-1A
R40	B-1B
R41	B-1B
R42	B-1B
R43	B-2B
R44	B-2B
R45	B-2B
R46	B-1B
R47	B-1B
R101	A-2C
R102	B-2C
R103	B-2B
R104	B-2B
R105	B-2B
R106	B-2B
R107	B-2B
R108	B-1C
R109	B-1C
R110	B-1C
R111	B-1C
R112	B-1C
R113	B-1C
R115	B-1C
R117	B-1C
R118	B-1C
R120	A-1B
R121	A-1C
R122	B-1C
R123	B-1C
R125	B-2C
R126	B-2C
R127	A-2C
R128	A-2C
R129	B-1C
R130	B-1C
R132	B-2C
R133	B-2C
R134	B-2C
R135	B-2C
R136	B-2C
R137	A-2B
R138	A-2B
CAPACITOR	
C1	B-1A
C2	B-1A
C3	B-2A
C4	B-1A
C5	B-1A
C6	B-2A
C7	B-1A
C8	A-2A
C9	A-1A
C10	A-2A
C11	B-2A
C14	A-1A
C15	A-1A
C16	A-1A
C17	A-1B
C18	B-1B
C19	B-1B
C20	B-1B
C21	B-1B
C22	A-1B
C23	A-1B
C26	A-2B
C27	A-2A
C28	A-2A
C29	A-2B
C30	B-2B
C31	B-2B
C32	B-2B
C33	B-2B
C34	A-2B
C35	A-2B
C36	A-2B
C37	B-1B
C38	A-1B
C39	A-2B
C40	A-1B
C41	A-1B
C44	A-2B
C103	A-2C
C104	A-2C
C105	A-2B
C106	B-2B
C107	B-2B
C108	B-1C
C109	B-1C
C110	B-1C
C111	B-1C
C112	B-1B
C113	A-1C
C114	A-1C
C115	B-1C
C117	A-1C
C118	A-1C
C120	A-2B
C121	A-1C
C122	B-1B
C123	B-1C
C124	B-1C
C125	B-2C
C126	A-2C
C128	B-2C
C129	B-2C
C130	A-2C
C131	A-2C
C133	A-1C
C134	A-1C
C135	B-1C
C136	A-1C
C137	B-1C
C138	B-1C
C141	A-2B
C142	A-2C
C143	A-2C
C144	A-2C
C146	B-2C
C147	B-2C
COIL	
L102	A-2B
L104	A-1C
L105	B-2C
CONNECTOR	
CN1	A-1D
CN2	A-1A
TEST PIN	
TP101	A-1B
TP102	A-1B

4.17 REAR SCHEMATIC DIAGRAM


02 REAR
CN2
LED_GND
MOTOR_GND
CAP_ERR
VF_REG_5V
CAP_POWER
CAP_POWER
VF_UNREG
SYS. UNREG
BATT_CHECK
LITHIUM(+)
LM_UNREG
D. REG_5V
D. REG_5V
D. REG_5V
D. PWR_CTL
C. PWR_CTL
GND
TO MDA-SYSCON PROCESS & Y/C. AF/CPU CN15
(Page 4-13,14,15, 19,21,22)
CN1
GND
LAMP_ON
KEY_D
CPU_VCC
EJECT_SW
GND
V. GND(OUT)
A. GND(OUT)
TRIG_OUT
VIDEO_OUT
C. REG_5V
C. REG_5V
CAM_UNREG
CAM_UNREG
A. OUT(L)
A. OUT(R)
DRUM_UNREG
DRUM_UNREG
TO MDA-SYSCON PROCESS&Y/C. LINEAR AUDIO. AF/CPU CN16
(Page 4-13,14,15, 18,19,21,22)
CN3
CAM. 15V
CAM. -8V
C. REG_5V
CAM. GND
TO CCD CN203 (Page 4-46)
J2 PEMC1091
TRIG_OUT
A. OUT(R)
A. OUT(L)
RF_5V
VIDEO_OUT
J1 YQ31845
CP4 ICP-N10
CP5 #
Q8
Q4 2SB1302(ST)
Q5 DTC143EU
Q6 MPL1
Q3 2SB1302(ST)
IC2 MM1165GM
T1 PELN1045-P
Q7 2SB1121(TU)
D1 MA736
D2 DWA010
D3 DAN202U
Q204 DTC143EU
Q203 2SB1302(ST)
Q9 DTC143EU
CP3 ICP-N38
CP2 ICP-N38
D101 MA8068
D103 MA8068
D104 MA8068
D102
TO LAMP
LAMP_GND
LAMP_UNREG
CN4
Q205 2SB1308(QR)
Q201 2SB1308(QR)
Q202 DTC124EU
CP1 ICP-N38
IC1 MB3785APFV
Q1 DTA143EU
TML2 LITHIUM YQ31793
R206 D201 MA704
SW2 #
APS
SW3 PESW0662
LAMP ON/AUTO/OFF
SW1 PESW0605-02
EJECT
B1 ※
B2 ※
YQ31792 BATT TERM UNIT
TML1
CN5
GND
GND
N.C
UNREG.6V
UNREG.6V
JIG CONNECTOR

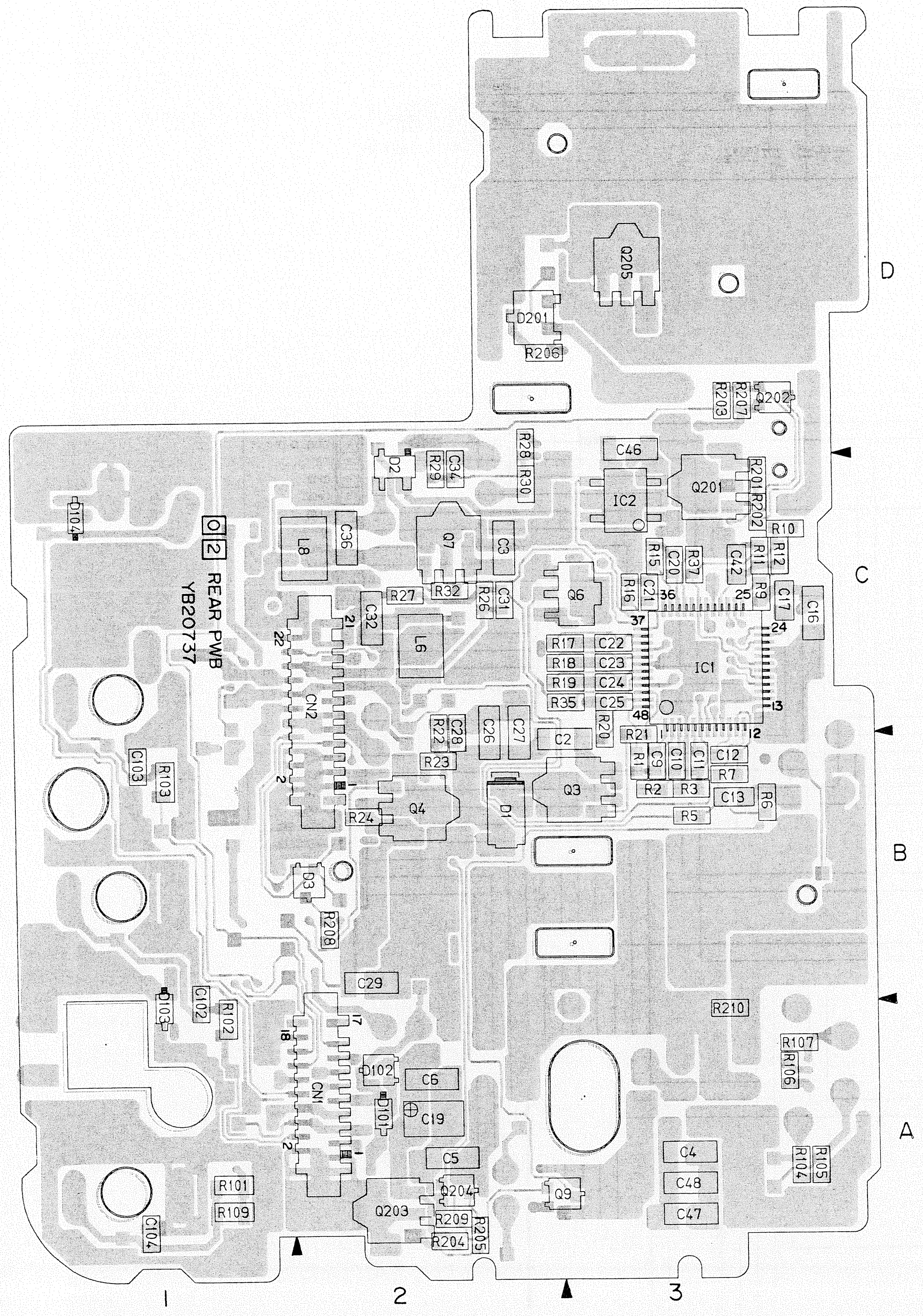
NOTES: 1. Mark(※)is not used.
2. COMPARISION CHART OF MODELS & MARKS(#)

REF. NO	MODELS	
	GR-HF900	GR-HF700
CP5	ICP-N10	NOT USED

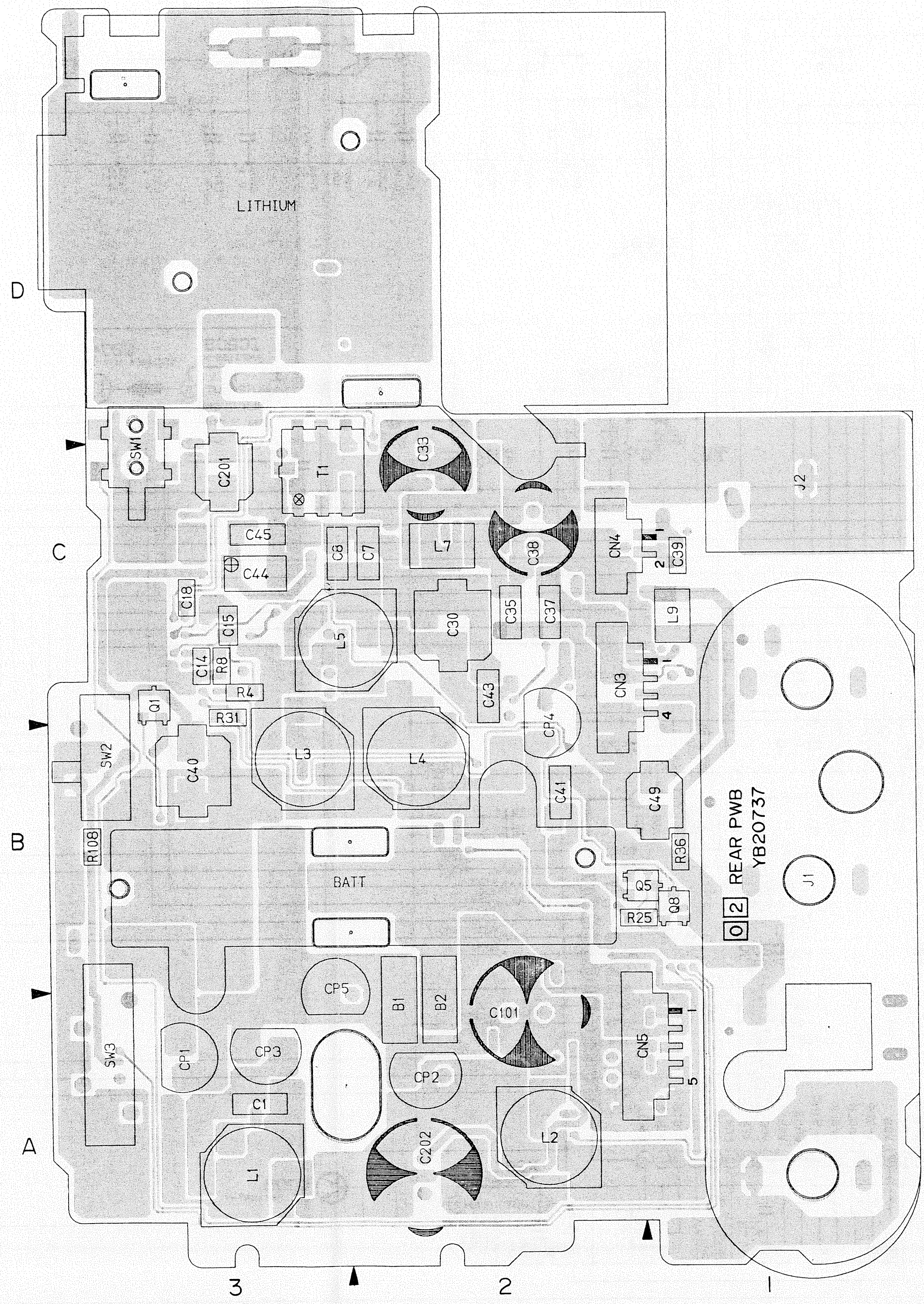
4.18 REAR AND APS CIRCUIT BOARDS

– REAR –

FOIL SIDE (B)

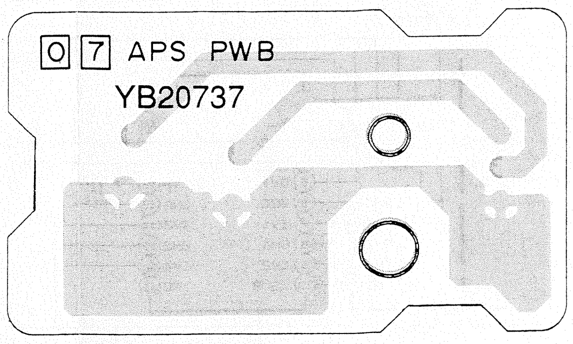


COMPONENT SIDE (A)

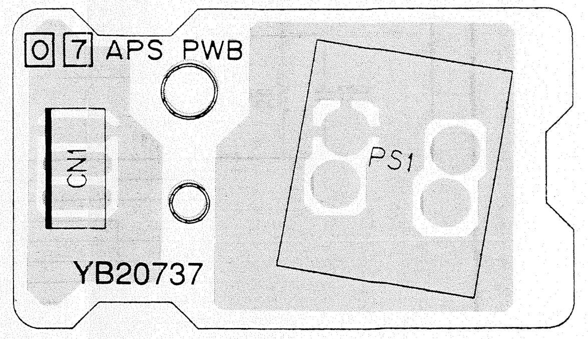


–APS–

FOIL SIDE (B)



COMPONENT SIDE (A)

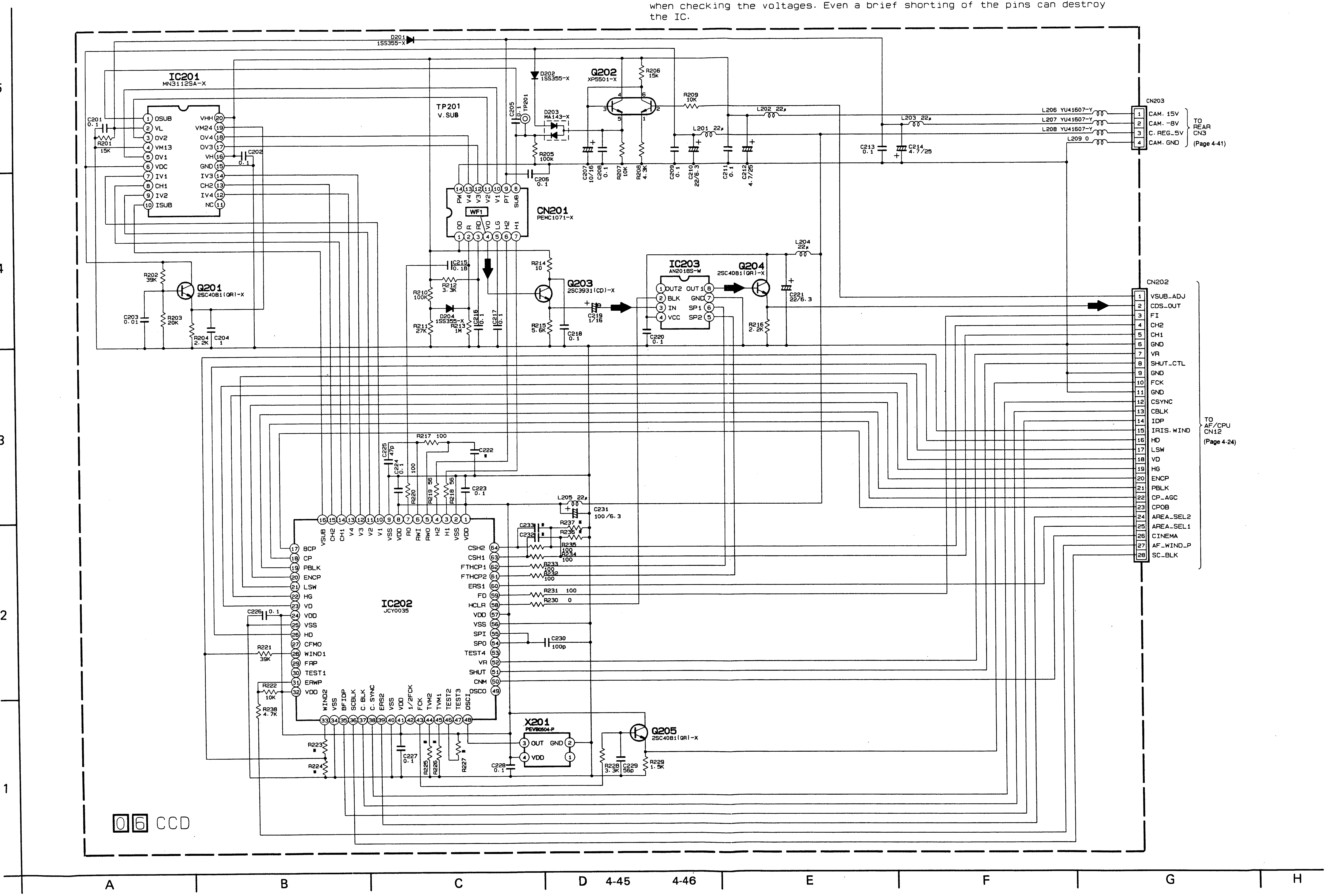


PARTS LOCATION GUIDE <REAR BOARD>

REF.No.	LOCATION	REF.No.	LOCATION	REF.No.	LOCATION	REF.No.	LOCATION
IC		R18	B-2C	C5	B-2A	C49	A-1B
IC1	B-3C	R19	B-2C	C5	B-2A	C102	B-1B
IC2	B-3C	R20	B-3B	C7	A-2C	C103	B-1B
TRANSISTOR		R21	B-3B	C8	A-3C	C104	B-1A
Q1	A-3C	R22	B-2B	C9	B-1B	C201	A-3C
Q3	B-3B	R23	B-2B	C10	B-1B	COIL	
Q4	B-2B	R24	B-2B	C11	B-1B	L1	A-3A
Q5	A-1B	R25	A-1B	C12	B-1B	L2	A-2A
Q6	B-3C	R26	B-2C	C13	B-1B	L3	A-3B
Q7	B-2C	R27	B-2C	C14	A-3C	L4	A-2B
Q8	A-1B	R28	B-2D	C15	A-3C	L5	A-3C
Q9	B-2A	R29	B-2C	C16	B-3C	L6	B-2C
Q201	B-3C	R30	B-2C	C17	B-3C	L7	A-2C
Q202	B-3D	R31	A-3C	C18	A-3C	L8	B-2C
Q203	B-2A	R32	B-2C	C19	B-2A	L9	A-1C
Q204	B-2A	R35	B-2C	C20	B-3C	SWITCH	
Q205	B-3D	R36	A-1B	C21	B-3C	SW1	A-3C
DIODE		R37	B-3C	C22	B-3C	SW TRANS	
D1	B-2B	R101	B-1A	C23	B-3C	T1	A-3C
D2	B-2C	R102	B-1A	C24	B-3C	CONNECTOR	
D3	B-2B	R103	B-1B	C25	B-3C	CN1	B-2A
D101	B-2A	R104	B-3A	C26	B-2B	CN2	B-2C
D102	B-2A	R105	B-3A	C27	B-2B	CN3	A-2C
D103	B-1B	R106	B-3A	C28	B-2B	CN4	A-2C
D104	B-1C	R107	B-3A	C29	B-2B	CN5	A-1A
D201	B-2D	R108	A-3B	C30	A-2C	CP	
RESISTOR		R109	B-1A	C31	B-2C	CP1	A-3A
R1	B-3B	R201	B-3C	C32	B-2C	CP2	A-2A
R2	B-3B	R202	B-3C	C34	B-2C	CP3	A-3A
R3	B-3B	R203	B-3D	C35	A-2C	CP4	A-2B
R4	A-3C	R204	B-2A	C36	B-2C	CP5	A-3B
R5	B-3B	R205	B-2A	C37	A-2C		
R6	B-3B	R206	B-2D	C39	A-1C		
R7	B-3B	R207	B-3D	C40	A-3C		
R8	A-3C	R208	B-2B	C41	A-3B		
R9	B-3C	R209	B-2A	C42	B-3C		
R10	B-3C	R210	B-3A	C43	A-2C		
R11	B-3C	CAPACITOR		C44	A-3C		
R12	B-3C	C1	A-3A	C45	A-3C		
R15	B-3C	C2	B-2B	C46	B-3D		
R16	B-3C	C3	B-2C	C47	B-3A		
R17	B-2C	C4	B-3A	C48	B-3A		

4.19 CCD SCHEMATIC DIAGRAM

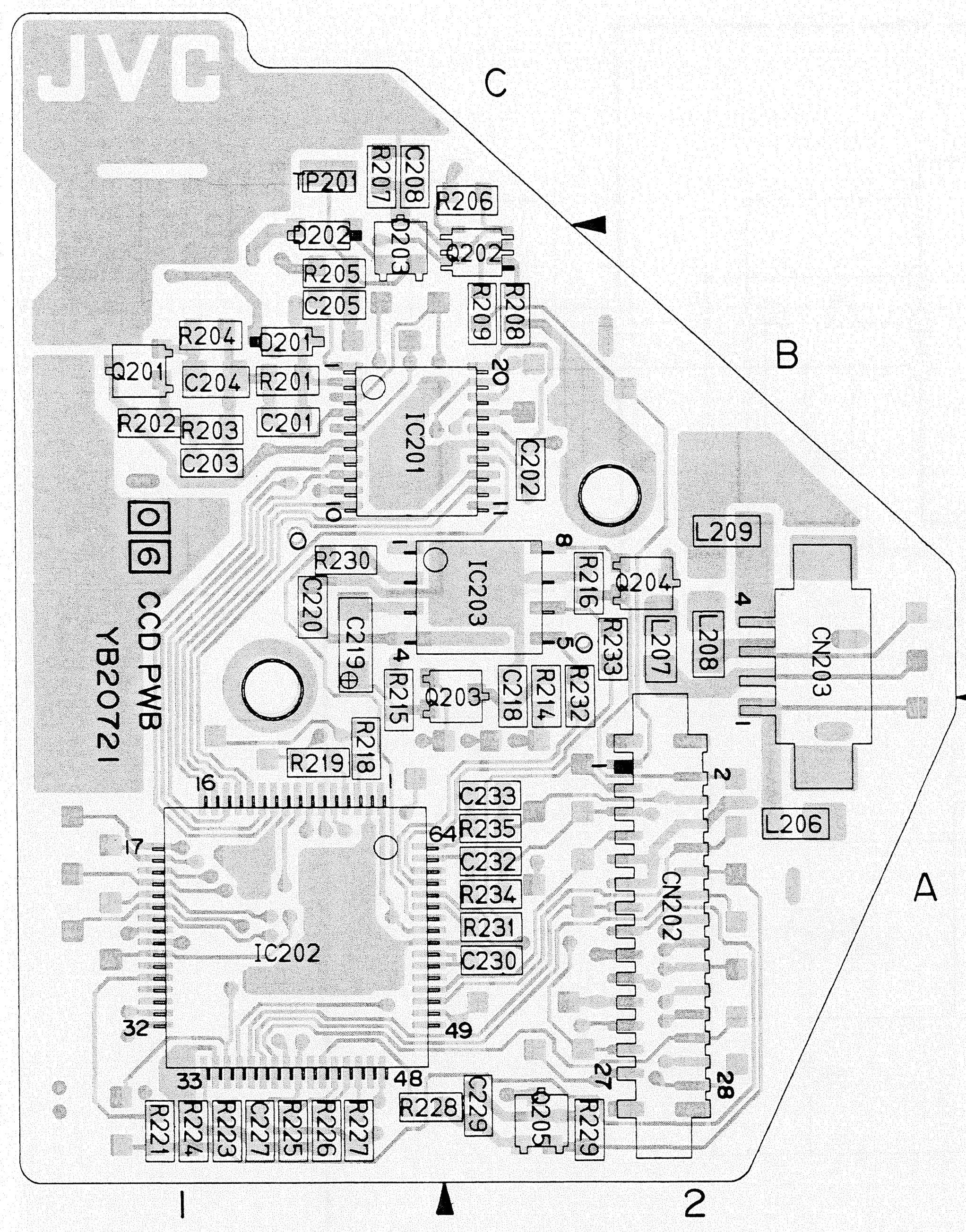
NOTES: 1. Mark(※)is not used.
2. A DC-DC converter is included in the IC of this CCD circuit. Use ample care when checking the voltages. Even a brief shorting of the pins can destroy the IC.


IC201
MN3112SA-X
1 OSUB
2 VL
3 OV2
4 VM13
5 OV1
6 VDC
7 IV1
8 CH1
9 IV2
10 ISUB
20 VHH
19 VM24
18 OV4
17 OV3
16 VH
15 GND
14 IV3
13 CH2
12 IV4
11 NC
C201 0.1
R201 15K
C202 0.1
R202 39K
Q201
2SC4081(QR)-X
C203 0.01
R203 20K
R204 2.2K
C204 1
D201
1SS355-X
D202
1SS355-X
TP201
V.SUB
C205 0.1
TP201
D203
MA143-X
R205 100K
C206 0.1
Q202
XP5501-X
R206 15k
R209 10K
C207 10/16
C208 0.1
R207 10K
R208 4.3K
C209 0.1
C210 22/6.3
C211 0.1
C212 4.7/25
L201 22µ
L202 22µ
L203 22µ
C213 0.1
C214 4.7/25
CN201
PEMC1071-X
WF1
14 PW
13 V4
12 V3
11 V2
10 V1
9 PT
8 SUB
1 OD
2 R
3 RD
4 VO
5 LG
6 H2
7 H1
C215 0.18
R212 3.3K
R210 100K
D204
1SS355-X
R211 27K
R213 1M
C216 0.1
C217 0.1
R214 10
Q203
2SC3931(CD)-X
R215 5.6K
C218 0.1
C219 1/16
IC203
AN2018S-W
1 OUT2
2 BLK
3 IN
4 VCC
8 OUT1
7 GND
6 SP1
5 SP2
C220 0.1
Q204
2SC4081(QR)-X
L204 22µ
C221 22/6.3
R216 2.2K
L206 YU41607-Y
L207 YU41607-Y
L208 YU41607-Y
L209 0
CN203
1 CAM. 15V
2 CAM. -8V
3 C. REG_5V
4 CAM. GND
TO REAR CN3
(Page 4-41)
CN202
1 VSUB_ADJ
2 CDS_OUT
3 FI
4 CH2
5 CH1
6 GND
7 VR
8 SHUT_CTL
9 GND
10 FCK
11 GND
12 CSYNC
13 CBLK
14 IDP
15 IRIS. WIND
16 HD
17 LSW
18 VD
19 HG
20 ENCP
21 PBLK
22 CP_AGC
23 CPOB
24 AREA_SEL2
25 AREA_SEL1
26 CINEMA
27 AF_WIND_P
28 SC_BLK
TO AF/CPU CN12
(Page 4-24)
R217 100
C225 47p
C224 0.1
C222 ※
R220 100
R219 56
R218 56
C223 0.1
L205 22µ
C231 100/6.3
C233 ※
C232 ※
R237 ※
R236 ※
R235 100
R234 100
R233 100
R232 100
R231 100
R230 0
IC202
JCY0035
1 VDD
2 VSS
3 H1
4 H2
5 RWO
6 RWI
7 RO
8 VDD
9 VSS
10 V1
11 V2
12 V3
13 V4
14 CH1
15 CH2
16 VSUB
17 BCP
18 CP
19 PBLK
20 ENCP
21 LSW
22 HG
23 VD
24 VDD
25 VSS
26 HD
27 CFMO
28 WIND1
29 FRP
30 TEST1
31 ERWP
32 VDD
33 WIND2
34 VSS
35 BFIDP
36 SCBLK
37 C.BLK
38 C.SYNC
39 ERS2
40 VSS
41 VDD
42 1/2FCK
43 FCK
44 TVM2
45 TVM1
46 TEST2
47 TEST3
48 OSCI
49 OSCO
50 CNM
51 SHUT
52 VR
53 TEST4
54 SPO
55 SPI
56 VSS
57 VDD
58 HCLR
59 FD
60 ERS1
61 FTHCP2
62 FTHCP1
63 CSH1
64 CSH2
C226 0.1
R221 39K
R222 10K
R238 4.7K
R223 ※
R224 ※
C227 0.1
R225 ※
R226 ※
R227 ※
C230 100p
X201
PEVB0504-P
3 OUT
2 GND
4 VDD
1
C228 0.1
Q205
2SC4081(QR)-X
R228 3.3K
C229 56p
R229 1.5K
06 CCD
5
4
3
2
1
A
B
C
D
E
F
G
H

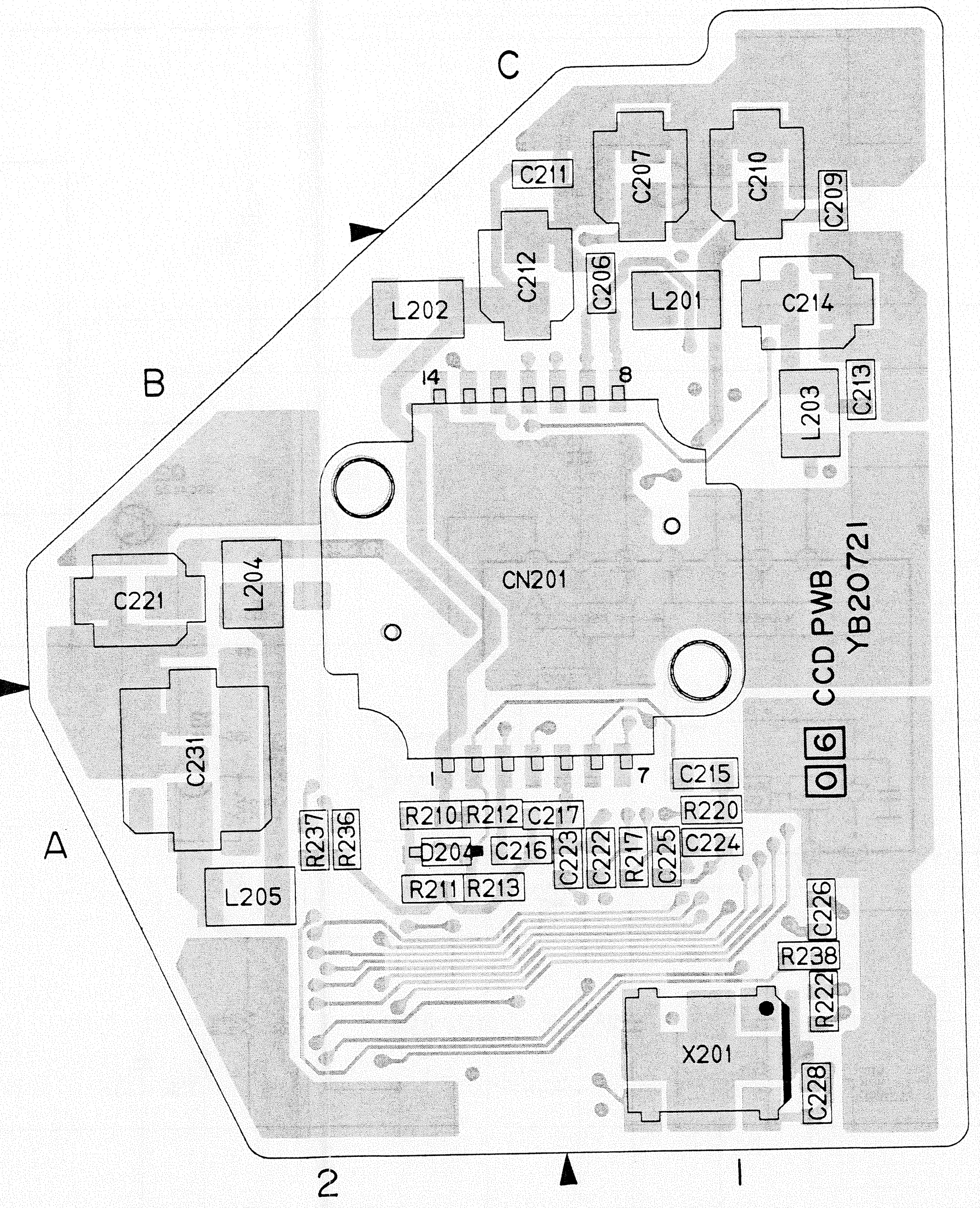
4.20 CCD AND UPPER DRUM CIRCUIT BOARDS

– CCD –

FOIL SIDE (B)


JVC
C
B
A
1
2
TP201
R207
C208
R206
D202
D203
Q202
R205
C205
R209
R208
R204
D201
Q201
C204
R201
R202
R203
C201
C203
IC201
C202
20
10
11
0 6 CCD PWB YB20721
R230
IC203
C220
C219
R216
Q204
L209
L207
L208
CN203
R233
R215
Q203
C218
R214
R232
R218
R219
C233
R235
C232
R234
R231
C230
IC202
CN202
L206
16
17
32
33
48
49
64
2
27
28
R221
R224
R223
C227
R225
R226
R227
R228
C229
Q205
R229

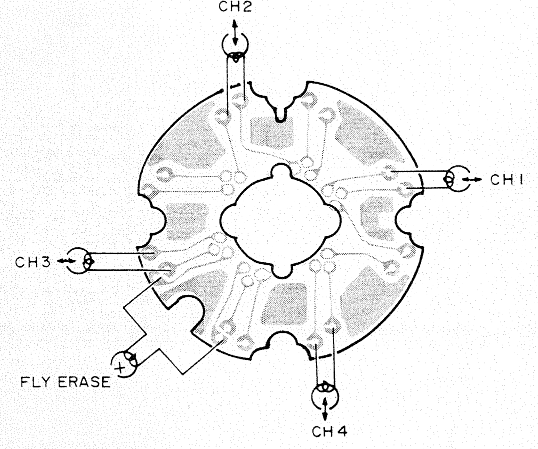
COMPONENT SIDE (A)


C
B
A
2
1
C211
C207
C210
C209
C212
C206
L202
L201
C214
C213
L203
14
8
CN201
C221
L204
C231
0 6 CCD PWB YB20721
1
7
C215
R237
R236
R210
R212
C217
R220
D204
C216
C223
C222
R217
C225
C224
R211
R213
L205
C226
R238
R222
X201
C228

PARTS LOCATION GUIDE <CCD BOARD>

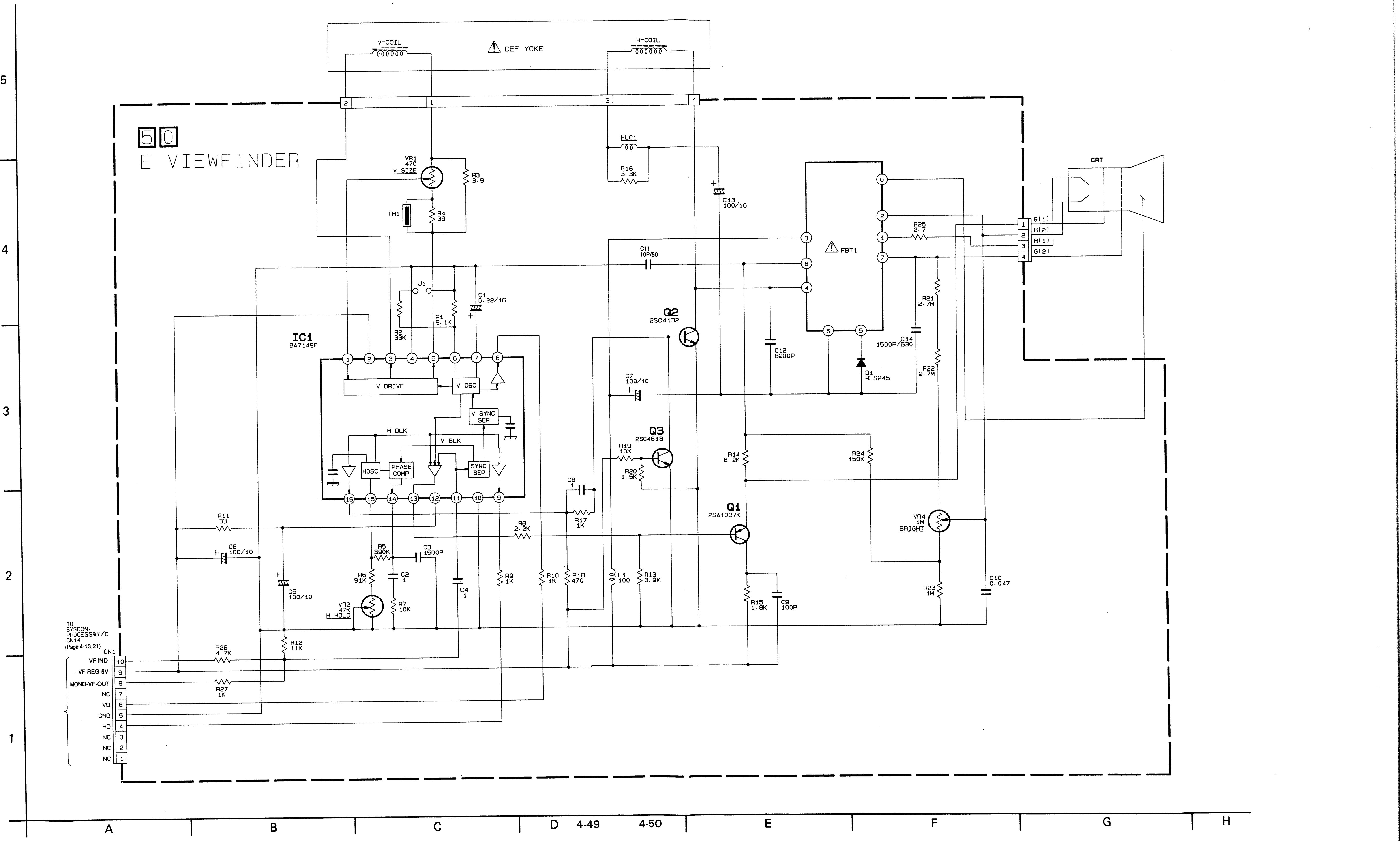
REF.No.	LOCATION	REF.No.	LOCATION
IC		CAPACITOR	
IC201	B-1B	C201	B-1B
IC202	B-1A	C202	B-2B
IC203	B-2B	C203	B-1B
TRANSISTOR		C204	B-1B
Q201	B-1B	C205	B-1B
Q202	B-2B	C206	A-1B
Q203	B-2B	C207	A-1C
Q204	B-2B	C208	B-1C
Q205	B-2A	C209	A-1C
DIODE		C210	A-1C
D201	B-1B	C211	A-2C
D202	B-1B	C212	A-2B
D203	B-1B	C213	A-1B
D204	A-2A	C214	A-1B
RESISTOR		C215	A-1A
R201	B-1B	C216	A-2A
R202	B-1B	C217	A-1A
R203	B-1B	C218	B-2A
R204	B-1B	C219	B-1B
R205	B-1B	C220	B-1B
R206	B-2C	C221	A-2B
R207	B-1C	C222	A-1A
R208	B-2B	C223	A-1A
R209	B-2B	C224	A-1A
R210	A-2A	C225	A-1A
R211	A-2A	C226	A-1A
R212	A-2A	C227	B-1A
R213	A-2A	C228	A-1A
R214	B-2A	C229	B-2A
R215	B-1A	C230	B-2A
R216	B-2B	C231	A-2A
R217	A-1A	C232	B-2A
R218	B-1A	C233	B-2A
R219	B-1A	COIL	
R220	A-1A	L201	A-1B
R221	B-1A	L202	A-2B
R222	A-1A	L203	A-1B
R223	B-1A	L204	A-2B
R224	B-1A	L205	A-2A
R225	B-1A	L206	B-2A
R226	B-1A	L207	B-2B
R227	B-1A	L208	B-2B
R228	B-1A	L209	B-2B
R229	B-2A	RESONATOR	
R230	B-1B	X201	A-1A
R231	B-2A	CONNECTOR	
R232	B-2A	CN201	A-2B
R233	B-2B	CN202	B-2A
R234	B-2A	CN203	B-2B
R235	B-2A	TEST PIN	
R236	A-1A	TP201	B-1C
R237	A-1A		
R238	A-1A		

– UPPER DRUM –


CH2
CH1
CH3
FLY ERASE
CH4

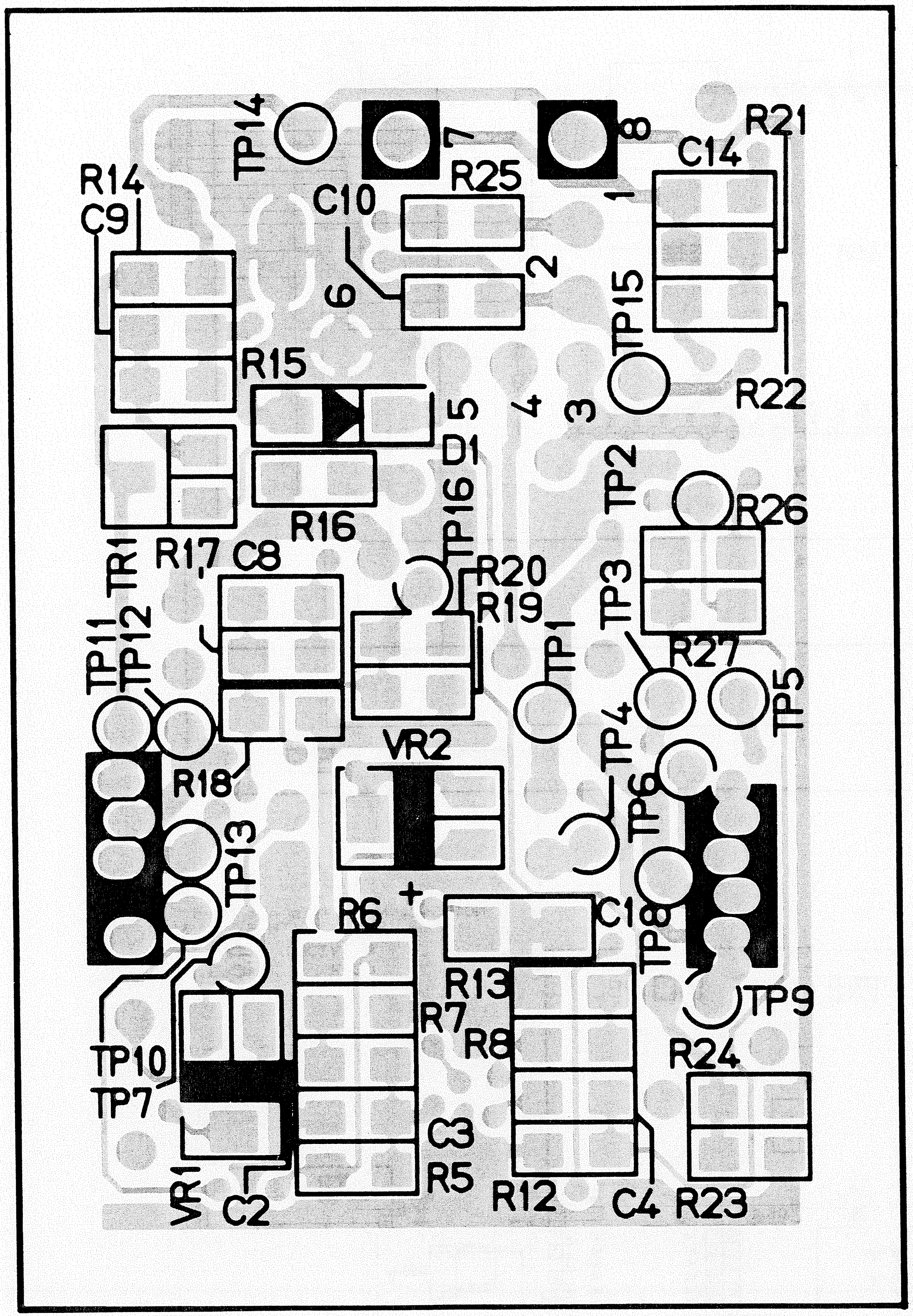
4 0 UPPER DRUM PWB

4.21 ELECTRONIC VIEWFINDER SCHEMATIC DIAGRAM [for GR-HF700]


V-COIL
DEF YOKE
H-COIL
2
1
3
4
50
E VIEWFINDER
VR1
470
V SIZE
R3
3.9
TH1
R4
39
HLC1
R16
3.3K
C13
100/10
FBT1
0
2
1
3
8
4
7
6
5
R25
2.7
CRT
G(1)
H(2)
H(1)
G(2)
C11
10P/50
J1
C1
0.22/16
R1
9.1K
R2
33K
IC1
BA7149F
Q2
2SC4132
C12
6200P
D1
RLS245
C14
1500P/630
R21
2.7M
R22
2.7M
V DRIVE
V OSC
V SYNC
SEP
H DLK
V BLK
HOSC
PHASE
COMP
SYNC
SEP
C7
100/10
Q3
2SC461B
R19
10K
R20
1.5K
C8
1
R17
1K
R14
8.2K
R24
150K
Q1
2SA1037K
VR4
1M
BRIGHT
R11
33
R8
2.2K
C6
100/10
R5
390K
C3
1500P
C2
1
R6
91K
VR2
47K
H HOLD
R7
10K
C4
1
R9
1K
R10
1K
R18
470
L1
100
R13
3.9K
R15
1.8K
C9
100P
R23
1M
C10
0.047
C5
100/10
R12
11K
TO
SYSCON,
PROCESS&Y/C
CN14
(Page 4-13,21)
CN1
VF IND
VF-REG-5V
MONO-VF-OUT
NC
VD
GND
HD
NC
NC
NC
R26
4.7K
R27
1K
10
9
8
7
6
5
4
3
2
1
A
B
C
D
E
F
G
H

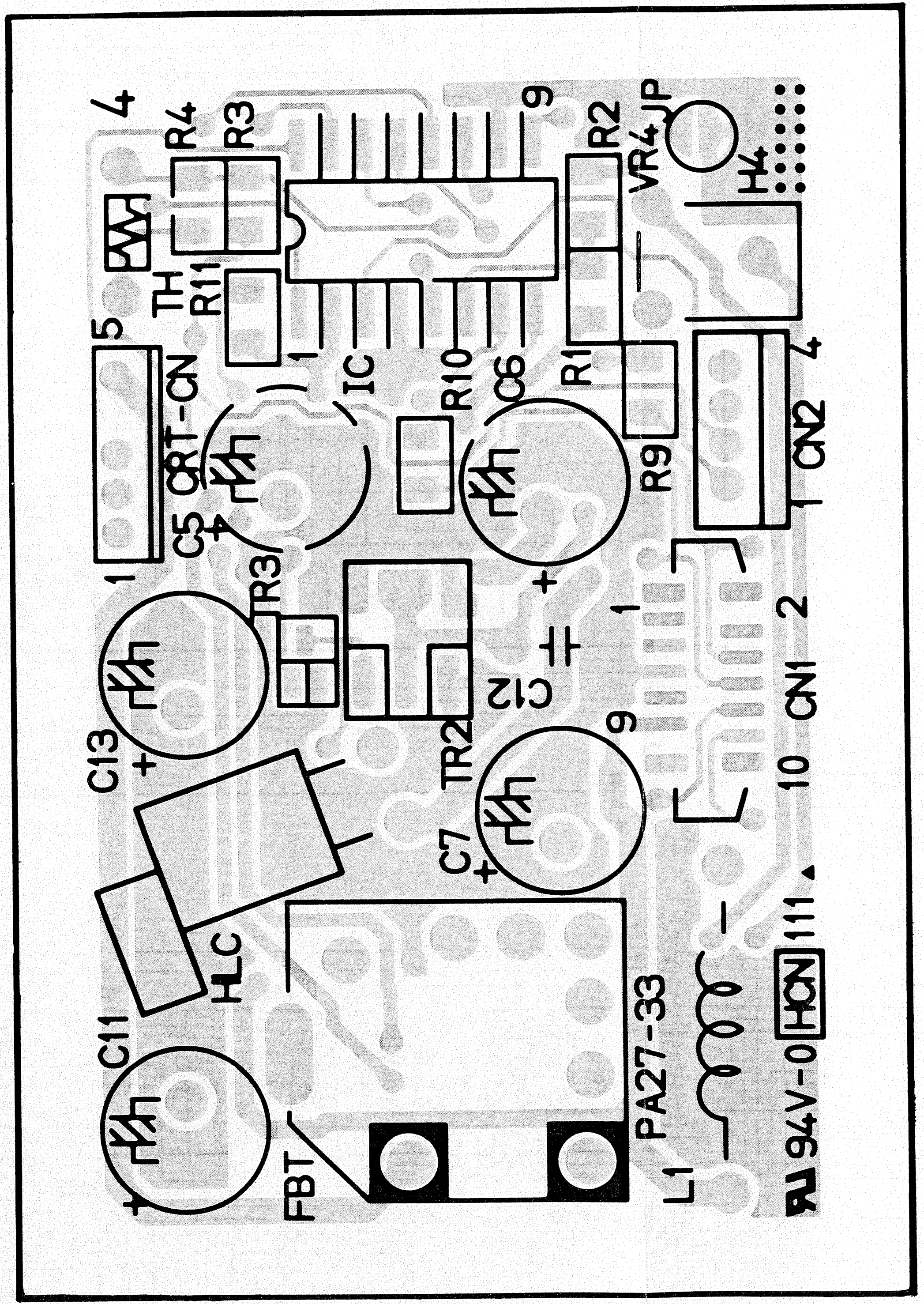
4.22 ELECTRONIC VIEWFINDER CIRCUIT BOARD [for GR-HF700]

FOIL SIDE (B)



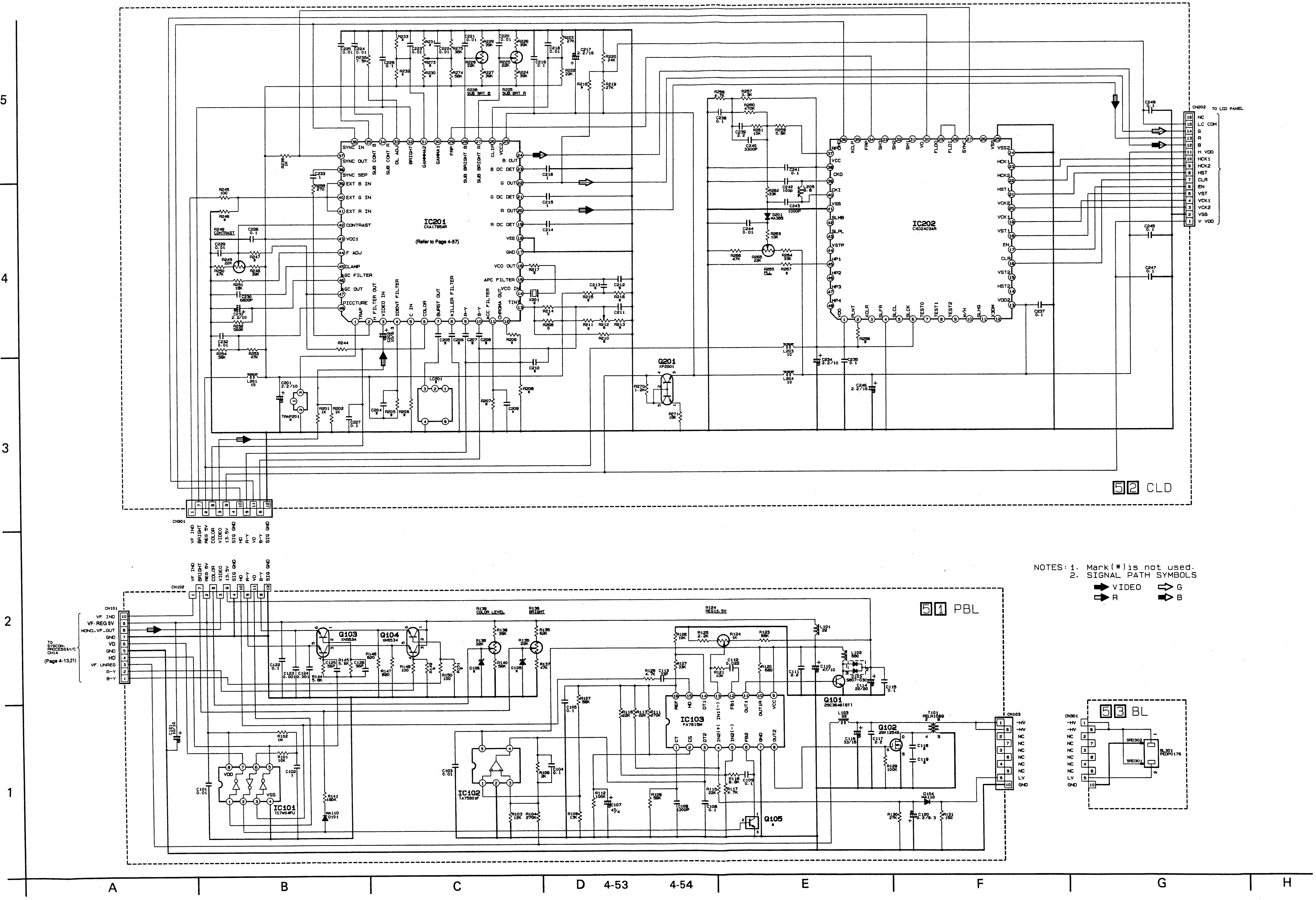
TP14
R21
R25
C14
R14
C9
C10
TP15
R15
D1
R22
TP2
R26
R16
TP16
R20
R19
TR1
R17
C8
TP3
TP1
R27
TP11
TP12
TP4
TP5
R18
VR2
TP6
TP13
R6
C1
TP8
R13
TP9
R7
R8
R24
TP10
TP7
C3
R5
VR1
C2
R12
C4
R23

COMPONENT SIDE (A)



R4
R3
R2
VR4
JP
TH
R11
IC
R10
C6
R1
CRT-CN
C5
R9
CN2
TR3
C12
CN1
C13
TR2
C7
HLC
C11
FBT
PA27-33
L1
94V-0
HCN
111

4.23 ELECTRONIC VIEWFINDER SCHEMATIC DIAGRAM [for GR-HF900]

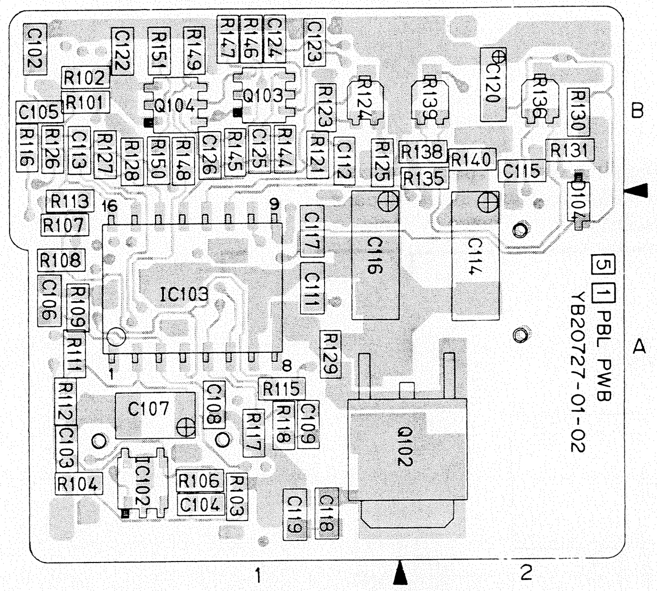

IC201
CXA1785AR
(Refer to Page 4-57)
SYNC IN
SYNC OUT
SYNC SEP
EXT B IN
EXT G IN
EXT R IN
CONTRAST
VCC1
F ADJ
CLAMP
AGC FILTER
AGC OUT
PICCTURE
TRAP
H FILTER OUT
VIDEO IN
IDENT FILTER
C IN
COLOR
BURST OUT
KILLER FILTER
R-Y
B-Y
ACC FILTER
CHROMA OUT
TINT
VCO IN
APC FILTER
VCO OUT
GND
VEE
R DC DET
R OUT
G DC DET
G OUT
B DC DET
B OUT
VCC2
CLIP
SUB BRIGHT R
SUB BRIGHT B
FRP
GAMMA1
GAMMA2
BRIGHT
DL ADJ
SUB CONT R
SUB CONT B
R249 CONTRAST
R228 SUB BRT B
R225 SUB BRT R
X201
LC201
TRAP201
L201 10
Q201
XP2501
IC202
CXD2403AR
VSS2
HCK1
HCK2
HST1
VCK2
VCK1
VST1
EN
CLR
VST2
HST2
VDD2
VDD
XCLR
FRP
SH3
SH2
SH1
VD
FLD1
FLD2
SYNC
VCC
CKO
CKI
VSS
SLMB
SLPL
VSTP
HP1
HP2
HP3
HP4
LNT
SLFR
SLCL
SLCK
TEST0
TEST1
TEST2
W/H
SLHG
X30M
D201 HA369
R265 PLL
L203 10
L204 10
CN202 TO LCD PANEL
16 NC
15 LC COM
14 G
13 R
12 B
11 H VDD
10 HCK1
9 HCK2
8 HST
7 CLR
6 EN
5 VST
4 VCK1
3 VCK2
2 VSS
1 V VDD
5 2 CLD
CN201
VF IND
BRIGHT
REG 5V
COLOR
VIDEO
13.5V
SIG GND
HD
R-Y
VD
B-Y
SIG GND
CN102
5 1 PBL
CN101
VF IND
VF-REG 5V
MONO_VF_OUT
GND
VD
GND
HD
VF-UNREG
R-Y
B-Y
TO SYSCON, PROCESS,Y/C CN14
(Page 4-13,21)
Q103 XN6534
Q104 XN6534
R139 COLOR LEVEL
R136 BRIGHT
R124 REG13.5V
D106
D108
IC101
TC7W04FU
VDD
VSS
IC102
TA75S01F
IC103
FA7615M
REF
HD
DT1
IN1(+)
IN1(-)
FB1
OUT1
OUT1R
VCC
CT
CS
DT2
IN2(+)
IN2(-)
FB2
GND
OUT2
Q101
2SC3646(ST)
Q102
2SK1254S
Q105
D101 MA110
D104 MA110
L101 22
L102 680
L103 22
T101 PELR1069
CN103
-HV
+HV
NC
LV
GND
5 3 BL
CN301
BL301 PEDP0176
SRD302
SRD301
A
B
C
D
E
F
G
H
1
2
3
4
5

NOTES: 1. Mark(*)is not used.
2. SIGNAL PATH SYMBOLS
➡ VIDEO ⇨ G
⇨ R ➡ B

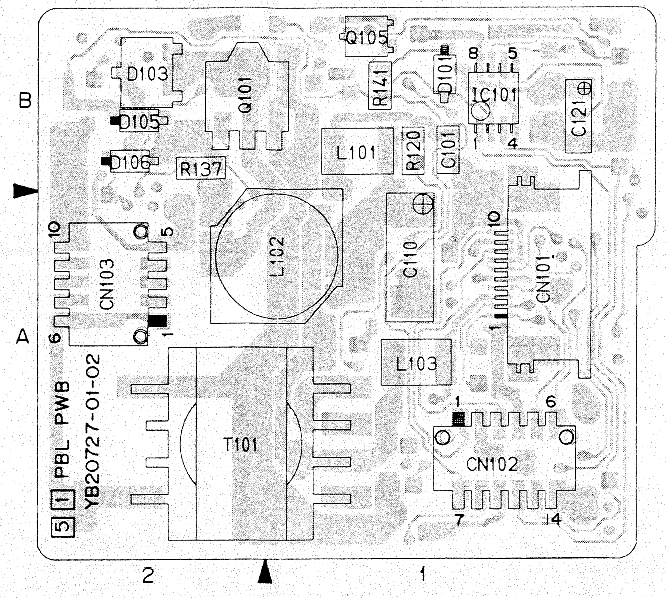
4.24 ELECTRONIC VIEWFINDER CIRCUIT BOARDS [for GR-HF900]

- PBL -

FOIL SIDE (B)

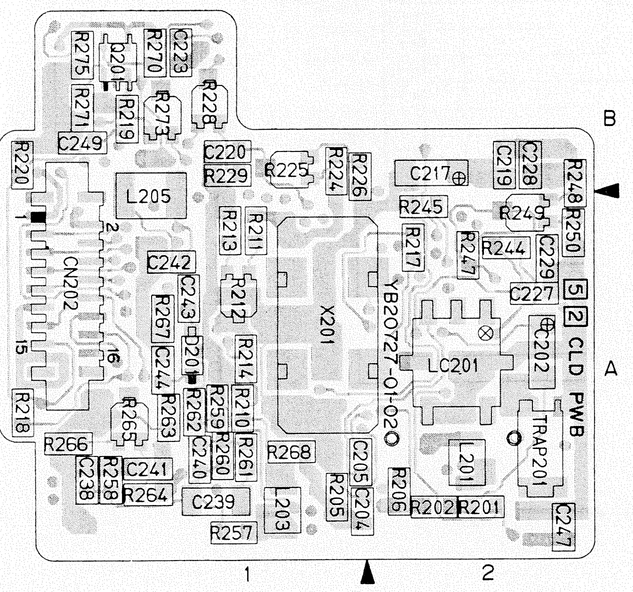

5 1 PBL PWB
YB20727-01-02
IC103
IC102
Q102
Q103
Q104
C107
C116
C114
B
A
1
2

COMPONENT SIDE (A)

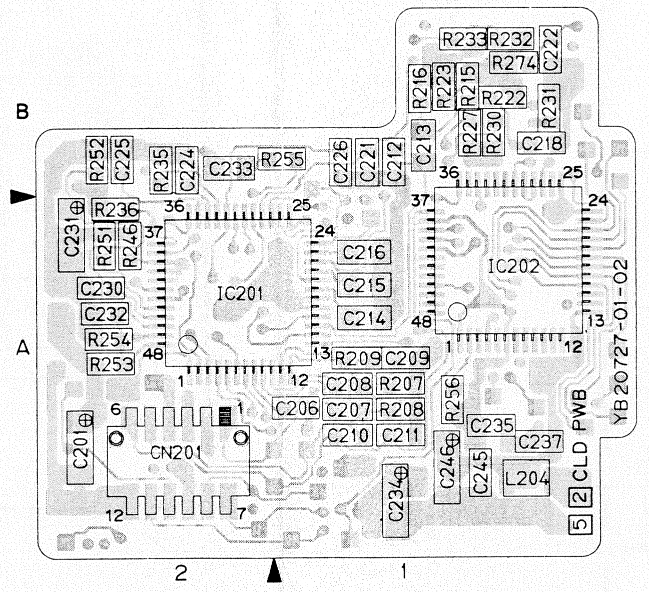

5 1 PBL PWB
YB20727-01-02
IC101
Q101
Q105
L101
L102
L103
T101
CN101
CN102
CN103
D101
D103
D105
D106
B
A
2
1

- CLD -

FOIL SIDE (B)

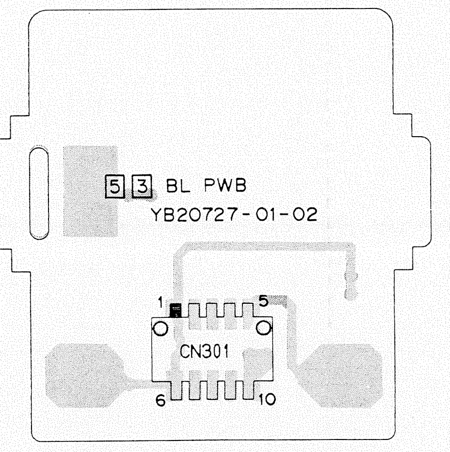

5 2 CLD PWB
YB20727-01-02
CN202
L205
X201
LC201
TRAP201
L201
L203
B
A
1
2

COMPONENT SIDE (A)

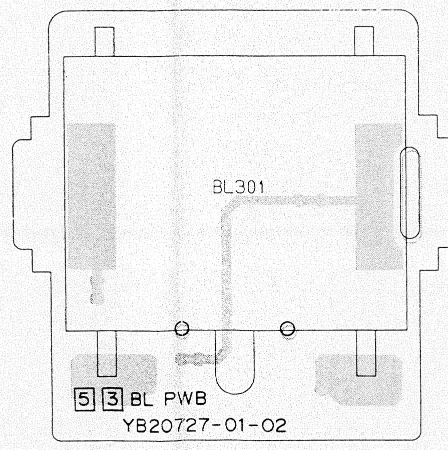

5 2 CLD PWB
YB20727-01-02
IC201
IC202
CN201
L204
B
A
2
1

- BL -

FOIL SIDE (B)


5 3 BL PWB
YB20727-01-02
CN301
1
5
6
10

COMPONENT SIDE (A)


BL301
5 3 BL PWB
YB20727-01-02

PARTS LOCATION GUIDE <PBL BOARD>

REF.No.	LOCATION
IC	
IC101	A-1B
IC102	B-1A
IC103	B-1A
TRANSISTOR	
Q101	A-2B
Q102	B-2A
Q103	B-1B
Q104	B-1B
Q105	A-1B
DIODE	
D101	A-1B
D103	A-2B
D104	B-2A
D105	A-2B
D106	A-2B
RESISTOR	
R101	B-1B
R102	B-1B
R103	B-1A
R104	B-1A
R106	B-1A
R107	B-1A
R108	B-1A
R109	B-1A
R111	B-1A
R112	B-1A
R113	B-1A
R115	B-1A
R116	B-1B
R117	B-1A
R118	B-1A
R120	A-1B
R121	B-1B
R123	B-1B
R124	B-1B
R125	B-1B
R126	B-1B
R127	B-1B
R128	B-1B
R129	B-1A
R130	B-2B
R131	B-2B
R135	B-2B
R136	B-2B
R137	A-2B
R138	B-2B
R139	B-2B
R140	B-2B
R141	A-1B
R144	B-1B
R145	B-1B
R146	B-1B
R147	B-1B
R148	B-1B
R149	B-1B
R150	B-1B
R151	B-1B
CAPACITOR	
C101	A-1B
C102	B-1B
C103	B-1A
C104	B-1A
C105	B-1B
C106	B-1A
C107	B-1A
C108	B-1A
C109	B-1A
C110	A-1A
C111	B-1A
C112	B-1B
C113	B-1B
C114	B-2A
C115	B-2B
C116	B-1A
C117	B-1A
C118	B-1A
C119	B-1A
C120	B-2B
C121	A-1B
C122	B-1B
C123	B-1B
C124	B-1B
C125	B-1B
C126	B-1B
COIL	
L101	A-1B
L102	A-1A
L103	A-1A
SW TRANS	
T101	A-2A
CONNECTOR	
CN101	A-1A
CN102	A-1A
CN103	A-2A

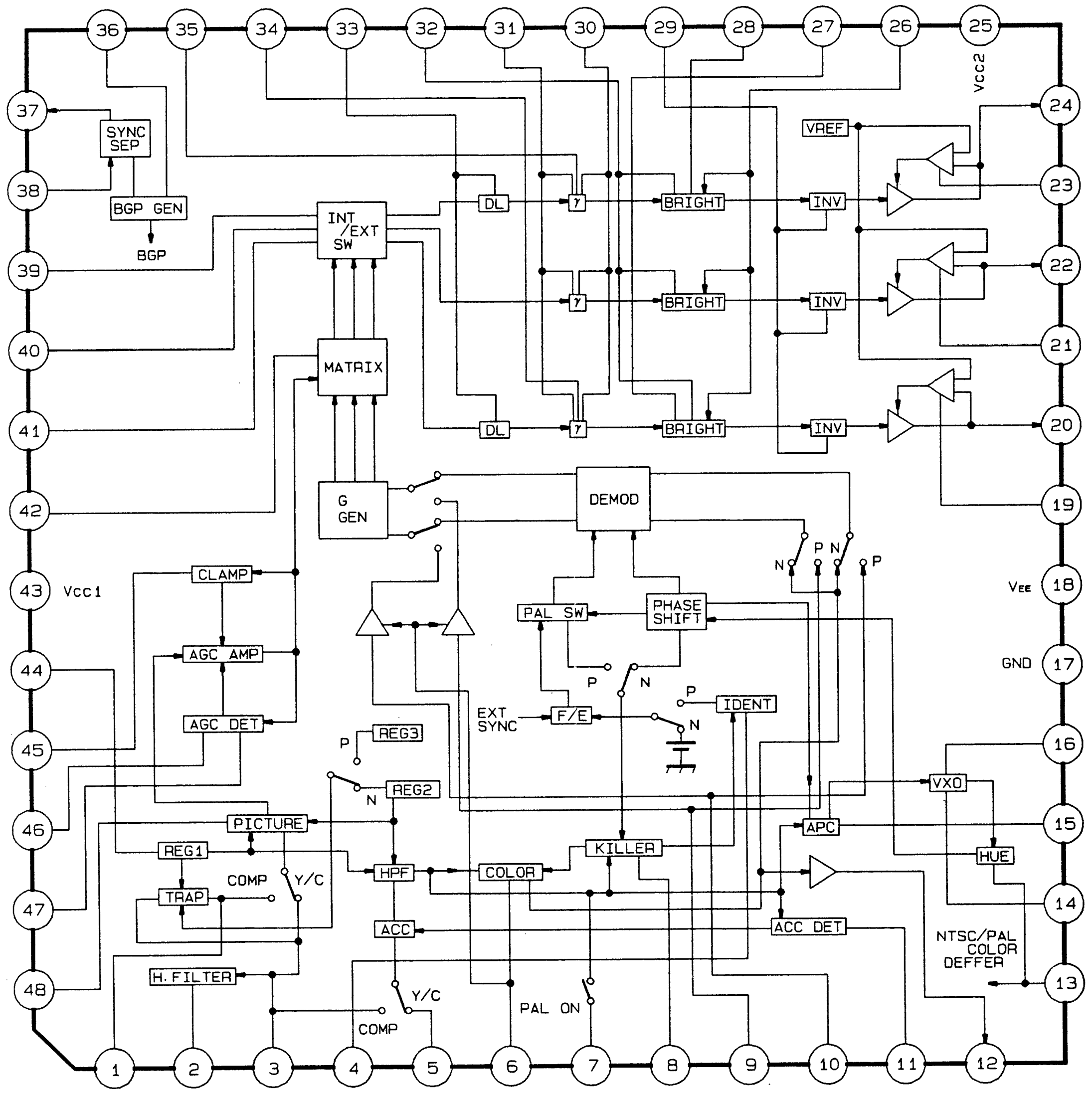
PARTS LOCATION GUIDE <CLD BOARD>

REF.No.	LOCATION
IC	
IC201	A-2A
IC202	A-1A
TRANSISTOR	
Q201	B-1B
DIODE	
D201	B-1A
RESISTOR	
R201	B-2A
R202	B-2A
R205	B-1A
R206	B-2A
R207	A-1A
R208	A-1A
R209	A-1A
R210	B-1A
R211	B-1A
R212	B-1A
R213	B-1A
R214	B-1A
R215	A-1B
R216	A-1B
R217	B-2A
R218	B-1A
R219	B-1B
R220	B-1B
R222	A-1B
R223	A-1B
R224	B-1B
R225	B-1B
R226	B-1B
R227	A-1B
R228	B-1B
R229	B-1B
R230	A-1B
R231	A-1B
R232	A-1B
R233	A-1B
R235	A-2B
R236	A-2A
R244	B-2A
R245	B-2A
R246	A-2A
R247	B-2A
R248	B-2B
R249	B-2A
R250	B-2A
R251	A-2A
R252	A-2B
R253	A-2A
R254	A-2A
R255	A-1B
R256	A-1A
R257	B-1A
R258	B-1A
R259	B-1A
R260	B-1A
R261	B-1A
R262	B-1A
R263	B-1A
R264	B-1A
R265	B-1A
R266	B-1A
R267	B-1A
R268	B-1A
R270	B-1B
R271	B-1B
R273	B-1B
R274	A-1B
R275	B-1B
CAPACITOR	
C201	A-2A
C202	B-2A
C204	B-1A
C205	B-1A
C206	A-1A
C207	A-1A
C208	A-1A
C209	A-1A
C210	A-1A
C211	A-1A
C212	A-1B
C213	A-1B
C214	A-1A
C215	A-1A
C216	A-1A
C217	B-2B
C218	A-1B
C219	B-2B
C220	B-1B
C221	A-1B
C222	A-1B
C223	B-1B
C224	A-2B
C225	A-2B
C226	A-1B
C227	B-2A
C228	B-2B
C229	B-2A
C230	A-2A
C231	A-2A
C232	A-2A
C233	A-2B
C234	A-1A
C235	A-1A
C237	A-1A
C238	B-1A
C239	B-1A
C240	B-1A
C241	B-1A
C242	B-1A
C243	B-1A
C244	B-1A
C245	A-1A
C246	A-1A
C247	B-2A
C249	B-1B
COIL	
L201	B-2A
L203	B-1A
L204	A-1A
L205	B-1B
TRAP	
TRAP201	B-2A
RESONATOR	
LC201	B-2A
CONNECTOR	
CN201	A-2A
CN202	B-1A

4.25 IC BLOCK DIAGRAM

- CLD -

IC201
CXA1785AR



SYNC SEP
BGP GEN
BGP
INT /EXT SW
MATRIX
G GEN
DEMOD
DL
BRIGHT
INV
VREF
Vcc2
Vcc1
VEE
GND
CLAMP
AGC AMP
AGC DET
PAL SW
PHASE SHIFT
EXT SYNC
F/E
IDENT
REG3
REG2
REG1
PICTURE
TRAP
COMP
Y/C
HPF
COLOR
KILLER
APC
VXO
HUE
ACC
ACC DET
H. FILTER
NTSC/PAL COLOR DEFFER
PAL ON
P
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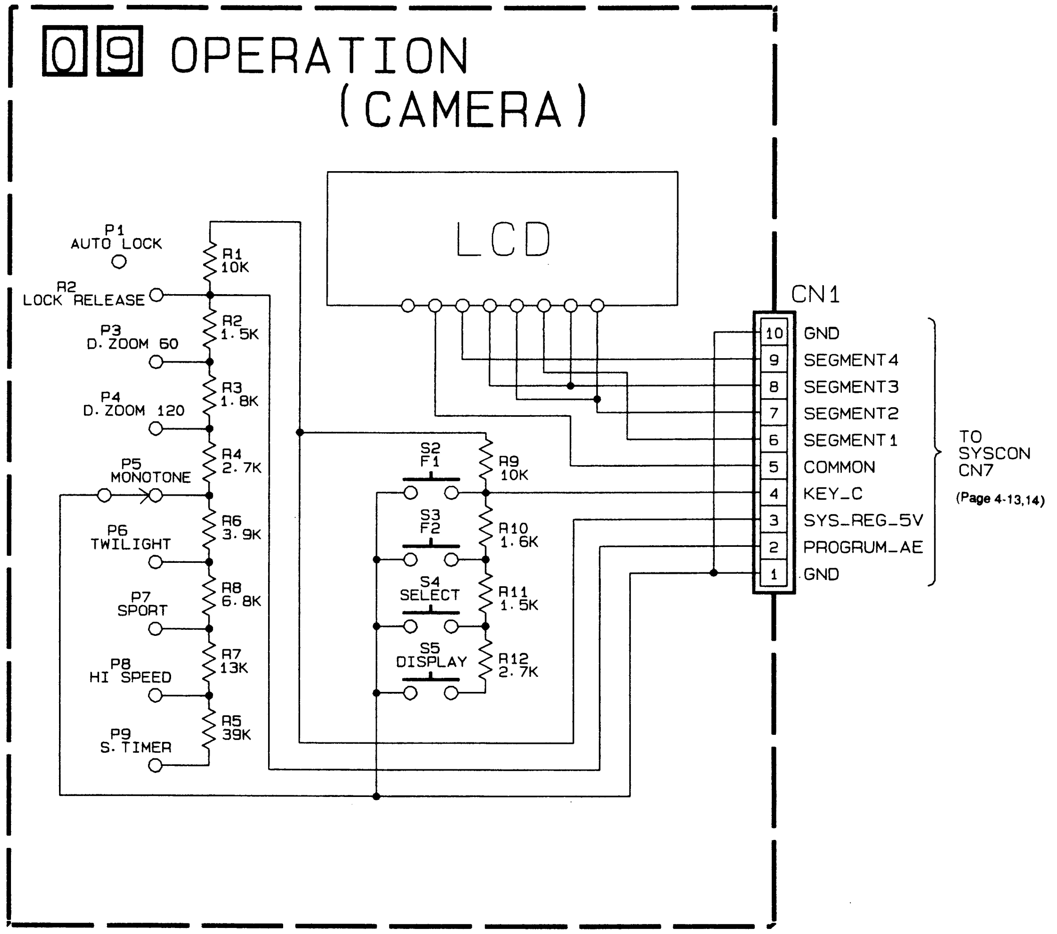
4.26 OPERATION (CAMERA) SCHEMATIC DIAGRAM

NOTE: This schematic diagram is only for reference.
Avoid replacing individual parts.
Replace the entire unit only.



09 OPERATION (CAMERA)
LCD
P1 AUTO LOCK
P2 LOCK RELEASE
P3 D. ZOOM 60
P4 D. ZOOM 120
P5 MONOTONE
P6 TWILIGHT
P7 SPORT
P8 HI SPEED
P9 S. TIMER
R1 10K
R2 1.5K
R3 1.8K
R4 2.7K
R6 3.9K
R8 6.8K
R7 13K
R5 39K
S2 F1
S3 F2
S4 SELECT
S5 DISPLAY
R9 10K
R10 1.6K
R11 1.5K
R12 2.7K
CN1
10 GND
9 SEGMENT4
8 SEGMENT3
7 SEGMENT2
6 SEGMENT1
5 COMMON
4 KEY_C
3 SYS_REG_5V
2 PROGRUM_AE
1 GND
TO SYSCON CN7
(Page 4-13,14)

4.27 VOLTAGE CHARTS

<SYSCON>

MODE /PIN	REC	PLAY
IC1		
1	5.0	5.0
2	1.6	1.6
3	1.9	1.9
4	5.0	5.0
5	5.0	5.0
6	0	0
7	5.0	-
8	0	0
9	2.5	2.5
10	3.0	3.0
11	4.8	4.8
12	2.5	2.5
13	0	0
14	5.0	5.0
15	0	5.0
16	5.0	5.0
17	5.0	5.0
18	0	0
19	0	5.0
20	0.4	0
21	0	0.4
22	3.0	3.0
23	0	5.0
24	1.1	0.6
25	1.9	2.3
26	2.5	2.5
27	0.6	0.6
28	2.8	1.7
29	2.5	2.5
30	0	5.1
31	0	5.0
32	0	5.0
33	0	0
34	0	0
35	0	5.1
36	5.0	0
37	5.0	0
38	5.0	5.0
39	5.0	0
40	0	0
41	0	0
42	0	0
43	5.0	5.0
44	0	0
45	5.0	5.0
46	5.0	5.0
47	0	0
48	0	0
49	5.0	5.0
50	-	-
51	2.3	2.3
52	0	0
53	0	0
54	1.4	1.4
55	1.4	1.4
56	4.8	4.8
57	4.8	4.8
58	0	0
59	0	0
60	2.5	2.5
61	0	0
62	0	4.9
63	4.9	4.9
64	5.0	5.0
65	4.9	4.9
66	0	5.0
67	5.0	5.0
68	5.0	0
69	3.8	3.8
70	0	5.0
71	0	0
72	0	0
73	0	5.0
74	0	5.0
75	5.0	0
76	0	0
77	0	0
78	0	4.1
79	5.0	5.0
80	4.9	4.9
81	0	0
82	2.8	0.6
83	0.9	0
84	5.0	5.0
85	3.0	3.0
86	0.5	0.5
87	5.1	5.1
88	4.9	4.9
89	0	0
90	2.4	2.4
91	2.4	2.4
92	2.4	2.4
93	0	0
94	2.6	2.6
95	0	2.4
96	2.4	2.4
97	0	2.4
98	2.4	2.4
99	0	0
100	2.4	0
101	2.0	0
102	0	0
103	0	0
104	5.0	5.0
105	4.8	4.8
106	0	0
107	5.0	5.0
108	5.0	5.0
109	2.5	2.5
110	4.4	0
111	1.8	1.8
112	0	0
113	3.4	3.4
114	2.5	2.5
115	2.4	2.4
116	4.8	4.8
117	3.6	3.6
118	4.8	4.8
119	4.8	4.8
120	4.8	4.8
121	4.6	4.6
122	4.7	4.7
123	0.4	0.4
124	2.5	2.5
125	0	0
126	0	0
127	0	0
128	0	0
IC2		
1	4.9	4.9
2	3.8	3.8
3	4.2	4.2
4	4.8	4.8
5	4.8	4.8
6	0	0
7	1.8	1.8
8	1.9	1.9
9	0	0
10	0	0
11	0	0
12	0	0
13	0	0
14	0	0
15	0	0
16	0	0
17	0	0
18	0	0
19	4.8	4.8
20	4.3	4.3
IC4		
1	-	0
2	-	5.0
3	0.5	0.5
4	5.1	5.1
5	0	0
6	0	5.0
7	0	0
8	-	-
9	-	-
10	-	-
11	-	-
12	0	5.0
13	5.0	0
14	5.0	5.0
IC5		
1	0	0
2	0	0
3	0	0
4	5.0	5.0
5	5.0	5.0
6	5.1	5.1
7	6.8	6.8
8	5.1	5.1
IC6		
1	0	0
2	6.8	6.8
3	4.9	4.9
4	0	0
5	0	0
6	4.0	4.0
7	0	0
8	0	0
Q1		
E	5.0	5.0
C	-	0
B	4.9	4.9
Q2		
E	0	0
C	0	0
B	5.0	0
Q3		
E	4.8	4.8
C	4.8	4.8
B	0	0
Q5		
E	4.8	0
C	4.8	0
B	0	5.0
Q6		
E	0	0
C	6.2	6.2
B	0.4	0.4
Q7		
E	6.7	6.7
C	0.5	0
B	6.7	6.7
Q8		
E	0	0
C	6.2	6.8
B	0.4	0
Q10		
E	0	0
C	4.8	4.8
B	0.4	0
Q201		
E	0	0
C	2.0	0
B	0	5.0
Q202		
E	0	0
C	0	0
B	0.6	0
Q203		
E	4.9	4.9
C	4.8	0
B	0	5.0
17	6.7	6.7
18	1.7	1.7
19	2.2	2.2
20	2.2	2.2
21	0.8	0.8
22	0.8	0.8
23	3.6	3.6
24	3.5	3.5
25	4.2	4.2
26	2.4	2.4
27	2.4	2.4
28	2.4	2.4
29	0	0
30	0	0
IC351		
1	0	0
2	-	-
3	2.2	2.2
4	1.3	1.3
5	0	0
6	1.6	1.6
7	1.1	1.1
8	0.4	0.4
9	3.8	3.8
10	0.6	0.6
11	0	0
12	0	0
13	0	0
14	4.8	4.8
15	2.4	2.4
16	2.4	2.4
17	2.4	2.4
18	4.0	4.0
19	0	0
20	2.4	2.4
21	2.4	2.4
22	2.4	2.4
23	2.4	2.4
24	2.4	2.4
25	2.4	2.4
26	1.7	1.7
27	1.7	1.7
28	1.7	1.7
29	0.8	0.8
30	0.8	0.8
31	0.8	0.8
32	0	0
Q351		
1	NC	NC
2	NC	NC
3	NC	NC
4	NC	NC
5	NC	NC
6	NC	NC
7	NC	NC
8	0.8	0
9	1.7	0
10	0.8	0.8
11	1.7	0
12	0.8	0
13	1.7	0
14	2.2	2.2
17	0	0
18	0	0
19	1.7	1.7
20	0	0
21	1.7	1.7
22	4.6	4.6
23	1.7	1.7
24	4.6	4.6
Q401		
E	4.6	5.0
C	4.4	0.4
B	0	5.0
Q402		
E	4.9	4.9
C	4.6	5.0
B	0	5.1
Q403		
1	-18.7	0.8
2	-12.6	0
3	-18.3	0.8
4	0	0
5	0	0
Q404		
E	4.7	4.7
C	-18.4	4.6
B	4.7	0
Q405		
E	0	0
C	4.7	0
B	0	4.9
Q406		
E	0	0
C	0	0
B	3.5	3.5
Q407		
E	0	0
C	3.5	3.5
B	0	0
Q408		
E	0	0
C	4.1	0.4
B	0	0.4

<MDA>

MODE /PIN	REC	PLAY
IC301		
1	4.9	4.9
2	0	0
3	2.4	2.4
4	2.4	2.4
5	2.4	2.4
6	2.0	2.0
7	1.3	1.3
8	4.0	4.0
9	1.3	1.3
10	5.1	5.1
11	0.7	0.7
12	1.5	1.5
13	2.4	2.4
14	1.7	1.7
15	0	0
16	1.7	1.7

<AUDIO>

MODE /PIN	REC	PLAY
IC401		
1	1.7	1.7
2	2.3	2.3
3	2.3	2.3
4	2.3	2.3
5	2.3	2.3
6	2.3	2.3
7	0	0
8	1.6	1.6
9	0	0
10	2.3	2.3
11	0.4	0
12	0	5.0
13	2.3	2.3
14	4.3	0.4
15	2.3	0
16	0	0

<PROCESS&Y/C>

MODE /PIN	REC	PLAY
IC501		
1	1.8	0
2	2.6	1.1
3	2.0	3.8
4	3.2	3.6
5	0	1.9
6	2.2	3.8
7	0	0
8	2.0	1.6
9	2.7	2.7
10	1.8	1.8
11	1.8	1.8
12	4.7	4.7
13	2.6	2.6
14	3.0	0
15	2.0	2.0
16	2.6	1.6
17	1.8	0.4
18	2.1	2.1
19	2.1	2.1
20	4.8	4.8
21	1.8	2.1
22	2.2	2.2
23	1.8	1.5
24	0	0
25	0.4	0.4
26	2.3	2.3
27	2.2	2.2
28	2.0	2.0
29	2.2	2.2
30	3.9	2.7
31	2.4	2.4
32	0.8	3.2
33	0	1.2
34	2.2	2.5
35	2.2	2.6
36	2.6	0
37	2.5	-
38	2.1	-
39	3.2	3.8
40	4.8	4.8
41	1.6	1.6
42	2.5	2.5
43	0	0
44	5.0	5.0
45	0	0
46	0	0
47	2.5	2.5
48	2.4	2.4
49	0	0
50	2.4	2.4
51	4.8	4.8
52	0	0
53	0	0
54	2.4	2.4
55	0	0
56	3.4	4.0
57	2.8	2.8
58	4.8	4.8
59	2.1	2.9
60	3.0	3.0
61	2.3	2.3
62	3.1	3.1
63	1.6	1.6
64	2.9	2.9
65	1.7	1.7
66	3.1	3.1
67	2.2	3.0
68	0	2.8
69	2.3	2.3
70	1.9	1.9
71	2.0	2.0
72	4.8	4.8
73	2.0	2.0
74	2.7	2.7
75	2.4	1.9
76	0	0
77	2.7	2.7
78	3.4	3.4
79	2.4	2.4
80	2.4	2.4
81	1.8	1.8
82	1.8	1.8
83	0	0
84	0	0
85	0	0
86	3.3	3.3
87	3.2	0.9
88	1.3	0.9
89	2.1	0.9
90	2.9	0.9
91	2.4	0.6
92	0.6	0
93	4.7	4.7
94	2.0	3.4
95	1.8	1.8
96	2.0	3.3
97	3.0	0
98	3.1	0
99	1.8	0
100	1.8	0
101	2.4	1.1
102	2.4	1.2
103	1.8	0
104	1.8	0.5
105	1.8	0
106	1.8	0
107	1.5	1.5
108	1.5	1.5
109	3.1	0
110	2.2	3.3
111	2.2	3.3
112	3.1	0
113	1.1	0.5
114	1.0	0
115	0	0
116	1.9	0
117	1.8	1.8
118	3.3	3.6
119	2.1	1.8

MODE /PIN	REC	PLAY
120	2.2	0
121	2.2	2.2
122	2.2	2.2
123	1.9	0
124	1.9	0
125	3.4	0
126	2.0	1.7
127	3.0	0
128	1.9	1.0
IC502		
1	4.1	2.2
2	0	0
3	4.2	2.2
4	0	2.3
5	2.3	2.3
6	0	0
7	1.9	1.9
8	4.0	4.0
9	2.8	2.8
10	0	0
11	0	0
12	2.2	3.0
13	3.2	3.2
14	2.6	2.6
15	4.8	4.8
16	3.5	3.5
IC503		
1	2.2	2.2
2	0	0
3	4.8	4.8
4	2.9	0
5	0	0
6	0	2.8
7	1.6	1.6
8	2.2	2.2
9	0	4.8
10	0	0
11	2.2	2.2
12	2.5	2.5
13	2.8	2.8
14	5.0	0
15	2.8	2.8
16	4.8	4.8
17	0	0
18	-2.6	-2.6
19	0	2.6
20	2.2	0
Q503		
E	2.4	2.4
C	4.7	4.7
B	3.1	3.1
Q505		
E	2.8	2.8
C	0	0
B	2.2	2.2
Q506		
E	2.8	2.8
C	0	0
B	2.2	2.2
Q507		
E	0	0
C	0	0
B	0	0
Q701		
E	3.4	2.5
C	4.8	4.8
B	4.1	3.1
Q701		
E	3.4	2.5
C	4.8	4.8
B	4.1	3.1
Q702		
E	2.3	2.3
C	4.8	4.8
B	2.8	2.8
Q703		
E	0.9	0.9
C	2.8	2.8
B	1.5	1.5
Q704		
E	0	0.8
C	4.8	4.8
B	0	1.4
Q706		
E	0	0
C	0	2.9
B	5.0	0
Q810		
E	1.9	0.5
C	0	0
B	1.3	0
Q811		
E	1.9	0.5
C	0	0
B	1.3	0
Q812		
E	1.6	0.6
C	0	0
B	0.9	0

<PRE/REC>

MODE /PIN	REC	PLAY
IC601	-	-
IC602		
1	2.5	2.5
2	0	0
3	2.3	2.3
4	0	0
5	2.4	2.4
6	5.0	5.0
7	2.4	2.4
8	4.8	4.8
IC603		
1	3.3	3.3
2	4.8	4.8
3	4.8	4.8
4	0	0
Q601		
E	0	0
C	3.6	0
B	0	5.0
Q603		
E	4.8	4.8
C	4.8	0
B	4.1	4.8
Q604		
E	4.8	4.8
C	0	4.8
B	4.8	4.2
Q605	-	-
Q606	-	-
Q609	-	-
Q610	-	-
Q611	-	-
Q613	-	-
Q614		
E	4.8	4.8
C	0	4.8
B	4.8	4.2
Q615	-	-
Q616		
E	4.8	4.8
C	0	0
B	4.0	4.8
Q617		
E	3.3	0
C	4.0	0
B	4.0	4.8
Q619		
E	3.6	0
C	4.1	4.8
B	4.2	0
Q620	-	-

<FLYING ERASE>

MODE /PIN	REC	PLAY
Q781		
E	4.9	4.9
C	4.7	0
B	0	5.0
Q782		
E	0	0
C	4.6	0
B	0.7	0
Q783		
E	0	0
C	4.6	0
B	0.7	0
Q784		
E	0	0
C	0	0
B	0.8	0

<AF/CPU>

MODE /PIN	REC	PLAY
IC801		
1	1.7	1.7
2	2.0	2.0
3	0	0
4	3.1	3.1
5	1.5	1.5
6	0	0
7	0	0
8	0	0
9	2.4	2.4
10	0	0
11	0	0
12	0	0
13	0	0
14	0	0
15	0	0
16	0	0
IC802		
1	1.8	1.8
2	1.8	1.8
3	1.8	1.8
4	4.9	4.9
5	1.8	1.8
6	1.8	1.8
7	1.8	1.8
8	2.0	2.0
9	1.8	1.8
10	1.8	1.8
11	0	0
12	1.7	1.7
13	1.7	1.7
14	1.5	1.5
IC803		
1	1.7	1.7
2	1.7	1.7
3	1.7	1.7
4	0	0
5	1.8	1.8
6	1.8	1.8
7	1.8	1.8
8	4.9	4.9
IC804		
1	1.7	0.6
2	2.4	0.6
3	2.6	0.6
4	4.9	0.6
5	2.5	0
6	2.5	0.6
7	1.6	0.6
8	2.3	0.6
9	1.8	0.6
10	1.8	1.8
11	0	0
12	1.8	1.8
13	1.8	0.6
14	1.8	0.6
IC805		
1	1.9	0
2	1.9	0.6
3	1.8	0.5
4	4.9	0.6
5	2.1	0.6
6	2.2	1.6
7	2.6	1.1
8	2.3	0.6
9	2.3	0.6
10	2.3	0.6
11	0	0
12	3.3	0
13	3.3	0
14	3.3	0
IC901		
1	1.7	1.2
2	1.9	1.1
3	3.2	1.1
4	0	0
5	2.5	0
6	3.4	0
7	4.9	0.6
8	5.0	5.0
9	0	0.4
10	4.9	4.9
11	0.6	2.7
12	0.7	0
13	5.0	5.0
14	0	0
15	3.0	3.0
16	0.4	0.4
17	0	0
18	4.8	4.8
19	0	0
20	0	0
21	0	0
22	4.9	0
23	0	0
24	0	0
25	2.5	0
26	0	0
27	2.4	0
28	0	0
29	0	0
30	0	0
31	0	0.4
32	0	0
33	0	0
34	2.1	0.5
35	4.9	4.9
36	3.9	0.6
37	0	0
38	0	0
39	0	0
40	4.9	0
41	0	0
42	0	0
43	0	0
44	0	0
45	2.5	0
46	4.9	0
47	0.5	0
48	0.5	0
49	5.0	0
50	4.9	0
51	0	0.5
52	2.5	0
53	0	0
54	1.2	0
55	1.2	0
56	0	0
57	0	0
58	1.2	0.5
59	1.1	0
60	4.9	4.9
61	2.4	2.4
62	5.0	5.0
63	1.8	0
64	0	0
65	0.5	0
66	0	0
67	0	0
68	4.9	4.9
69	2.6	2.6
70	2.6	2.6
71	0	0
72	4.9	4.9
73	0	0
74	4.9	4.9
75	4.9	0
76	1.3	0
77	4.6	0
78	1.2	1.2
79	1.8	0.6
80	0	0
IC902		
1	2.7	0
2	3.4	0.4
3	2.8	0
4	2.4	0
5	2.2	0
6	1.7	0
7	2.2	0
8	4.4	0
9	1.8	0.5
10	2.5	0.6
11	0	0
12	2.5	0.6
13	0	0
14	1.2	0.5
15	3.9	0.6
16	4.7	0.6
17	0	1.2
18	0.5	0
19	3.0	0
20	3.0	0
21	1.2	0
22	0	0
23	0	0
24	2.8	0
25	1.1	0
26	0.8	0
27	2.6	0
28	0.7	0.7
29	2.4	0
30	0	0
31	0	0
32	2.5	0
33	2.4	0
34	4.7	0.6
35	3.2	0.4
36	2.4	0
37	3.2	0.4
38	3.3	0
39	2.7	0
40	3.3	0
41	2.7	0
42	3.3	0
43	2.7	0
44	3.2	0.4
IC903		
1	4.9	4.9
2	0	0
3	4.9	4.9
4	0	0
5	0	0
6	4.0	4.0
7	4.9	4.9
8	4.9	4.9
IC904		
1	0	0
2	6.7	6.7
3	4.9	4.9
IC905		
1	2.4	2.4
2	2.4	2.4
3	2.4	2.4
4	4.9	4.9
5	2.0	2.0
6	2.0	2.0
7	1.1	1.1
8	3.7	3.7
9	0	0
10	0	0
11	0	0
12	2.4	2.4
13	2.4	2.4
14	2.0	2.0
IC906		
1	4.7	0.6
2	4.7	0.6
3	0	0
4	4.9	0
5	0	0
6	0	0
7	0	0
8	0.6	0.6
9	1.2	0
10	4.7	0
11	0	0
12	4.7	0
13	4.6	0
14	4.8	0.7
IC907		
1	0	0
2	4.8	4.8
3	4.8	4.8
4	0	0
5	4.7	4.7
6	4.8	4.8
7	6.7	6.7
8	0	0
9	0	0
10	0	0
11	0	0
12	0	0
13	0	0
14	0	0
15	0	0
16	0	0
17	6.7	6.7
18	0	0
19	0	0
20	4.9	4.9
21	4.9	4.9
22	2.0	2.0
23	0	0
24	4.9	4.9
IC908		
1	0	0
2	4.9	0.6
3	4.9	0.6
4	0	0
5	4.7	0
6	0	0
7	4.9	0.6
8	6.7	6.7
9	0	0
10	0	0
11	0	0
12	0	0
13	0	0
14	0	0
15	0	0
16	0	0
17	6.7	6.7
18	0	0
19	0	0
20	4.9	0
21	4.9	0
22	1.9	0.6
23	4.9	0
24	4.9	0.6
IC909		
1	0	0
2	0	0
3	0	0
4	4.9	4.9
5	0	0
IC910		
1	0.8	0.8
2	2.1	2.1
3	2.1	2.1
4	0	0
5	2.1	2.1
6	2.1	2.1
7	2.1	2.1
8	4.9	4.9
IC908		
1	2.1	0.6
2	3.2	0
3	0	0
4	0	0
5	2.1	0
6	2.1	0
7	0	0
8	4.9	0.6
Q802		
E	1.8	0.6
C	2.5	0.6
B	0.5	0
Q803		
1	0	0

MODE /PIN	REC	PLAY
2	1.8	1.8
3	0	0
4	1.8	1.8
5	1.8	1.8
Q804		
E	1.7	0.6
C	2.5	0.6
B	0	0
Q805		
1	0	0
2	1.8	1.8
3	0	0
4	1.8	1.8
5	1.8	1.8
Q901		
E	0	0
C	4.7	0.6
B	0	0
Q902		
E	4.9	0.6
C	4.6	0
B	4.7	0.6
Q904		
1	0	0
2	0	0
3	0	0
4	4.2	0.6
5	4.2	0.6
Q905		
1	1.7	1.7
2	1.1	1.1
3	3.9	3.9
4	4.9	4.9
5	3.2	3.2
6	0	0
Q906		
1	2.8	2.8
2	2.1	2.1
3	2.8	2.8
4	4.9	4.9
5	0	0
6	0	0
Q907		
1	1.7	1.7
2	1.1	1.1
3	1.8	1.8
4	4.9	4.9
5	1.1	1.1
6	0	0

<REAR>

MODE /PIN	REC	PLAY
IC1		
1	4.0	4.3
2	5.9	5.9
3	6.2	6.2
4	0	0
5	1.3	1.3
6	1.2	1.2
7	1.3	1.3
8	5.0	5.0
9	0	0
10	1.8	1.8
11	0	0
12	0	0
13	6.7	6.7
14	0	0
15	1.8	1.8
16	1.2	1.2
17	1.6	1.6
18	6.7	6.7
19	2.5	2.5
20	6.7	6.7
21	6.7	6.7
22	4.9	0
23	0	0
24	1.2	0
25	1.2	1.2
26	1.2	0
27	1.6	2.3
28	0.8	0
29	6.6	6.6

MODE /PIN	REC	PLAY
30	0	0
31	2.5	2.5
32	0	0
33	2.4	0
34	6.3	6.7
35	6.6	6.2
36	6.7	6.7
37	6.2	6.2
38	0	0
39	6.7	6.7
40	6.3	6.7
41	2.3	0
42	0	0
43	1.1	1.1
44	6.1	6.1
45	6.7	6.7
46	5.7	5.7
47	2.4	2.4
48	5.6	5.6
Q1		
E	6.6	6.6
C	6.6	6.6
B	0	0
Q3		
E	6.0	6.0
C	6.7	6.7
B	5.0	5.0
Q4		
E	4.2	4.9
C	4.9	4.9
B	4.9	0.6
Q5		
E	0	0
C	0	4.9
B	4.9	0
Q6		
1	0	0
2	6.3	6.3
3	6.7	6.7
4	2.4	2.4
Q7		
E	6.2	6.7
C	6.6	6.6
B	-0.3	0
Q8		
E	4.9	4.9
C	4.9	4.9
B	4.9	0
Q201		
E	6.8	6.8
C	6.8	6.8
B	0	0
Q202		
E	0	0
C	0	0
B	0	6.8
Q203		
E	5.9	5.9
C	6.7	6.7
B	6.7	6.7
Q204		
E	0	0
C	0	0
B	4.4	4.4
Q205		
E	0	0
C	0	0
B	0	0

<MIC AMP>

MODE /PIN	REC	PLAY
IC1		
1	2.3	2.3
2	2.1	2.1
3	2.1	2.1
4	2.1	2.1
5	2.1	2.1
6	2.1	2.1
7	2.1	2.1
8	2.1	2.1
9	0	0
10	2.1	2.1

MODE /PIN	REC	PLAY
11	2.1	2.1
12	2.1	2.1
13	4.1	4.1
14	2.1	2.1
15	2.1	2.1
16	4.1	4.1
17	2.1	2.1
18	2.1	2.1
19	2.1	2.1
20	2.1	2.1
21	2.1	2.1
22	2.1	2.1
23	2.1	2.1
24	0	0
25	2.1	2.1
26	1.2	1.2
27	2.1	2.1
28	0	0
29	2.5	2.5
30	2.1	2.1
31	2.1	2.1
32	2.1	2.1
Q3		
1	1.6	1.6
2	2.2	2.2
3	4.2	4.2
4	1.6	1.6
5	2.2	2.2
6	4.2	4.2
Q4		
E	4.1	4.1
C	4.8	4.8
B	4.8	4.8

<Hi-Fi AUDIO>

MODE /PIN	REC	PLAY
IC101		
1	4.8	4.8
2	4.7	3.8
3	2.4	2.4
4	4.8	4.8
5	0	0
6	2.5	2.5
7	0.7	0.7
8	1.6	1.6
9	0.7	0.4
10	0	0
11	2.4	2.4
12	2.4	2.4
13	2.3	2.3
14	2.4	2.4
15	2.3	2.3
16	4.7	4.7
17	1.8	1.8
18	1.6	1.6
19	0	0
20	0	0
21	4.8	4.8
22	4.1	4.1
23	0.4	0
24	0	0
25	0.4	2.3
26	4.8	4.8
27	2.5	2.5
28	0	0
29	0.5	0
30	1.8	2.8
31	1.7	1.7
32	2.0	2.0
33	4.7	4.7
34	2.4	2.4
35	2.4	2.4
36	0	0
37	2.4	2.4
38	2.4	2.4
39	0	0
40	0.6	0
41	1.6	1.6
42	0.6	0.6
43	2.4	2.4
44	4.7	4.7
45	2.4	2.4
46	0	0
47	4.7	4.7
48	0	0
49	2.4	2.4
50	1.9	1.9
51	2.3	2.3
52	2.3	2.3
53	2.3	2.3
54	2.2	2.2
55	2.4	2.4
56	2.4	2.4
57	2.3	2.3
58	2.3	2.3
59	2.4	2.4
60	2.4	2.4
61	0	0
62	2.5	2.5
63	2.5	2.5
64	0	0
Q101		
E	2.6	2.6
C	4.4	4.4
B	3.2	3.2
Q102		
E	1.2	1.2
C	3.2	3.2
B	1.8	1.8
Q103		
E	0	0
C	0	0
B	0	5.0
Q104		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
Q105		
E	4.8	4.8
C	0	0
B	4.8	4.8
Q106		
E	4.8	4.8
C	0	0
B	3.8	3.8

<CCD>

MODE /PIN	EE
IC201	
1	0
2	-7.7
3	0.8
4	0
5	0
6	4.9
7	0
8	4.8
9	0
10	4.8
11	0
12	0
13	4.8
14	4.6
15	0
16	15.0
17	0
18	-7.3
19	1.1
20	15.0
IC202	
1	4.8
2	0
3	2.4
4	1.9
5	2.2
6	2.2
7	0
8	4.9
9	0
10	0
11	0
12	4.6
13	4.7
14	4.9
15	4.9
16	4.9
17	0
18	0
19	1.0
20	0
21	0
22	2.4
23	0
24	4.9
25	0
26	0.5
27	0
28	3.6
29	0.9
30	0
31	0.6
32	4.9
33	1.8
34	0
35	0
36	0
37	1.1
38	4.4
39	0
40	0
41	4.8
42	2.2
43	2.1
44	4.8
45	4.8
46	0
47	0
48	2.9
49	2.4
50	0
51	4.9
52	0
53	0
54	2.3
55	2.3
56	0
57	4.9
58	0.4
59	2.4
60	0
61	1.1
62	1.1
63	1.0
64	1.0
IC203	
1	1.8
2	0.4
3	2.7
4	4.9
5	1.2
6	1.2
7	0
8	1.8
CN201	
1	15.0
2	3.5
3	15.0
4	11.5
5	3.2
6	2.1
7	2.5
8	4.6
9	8.2
10	0
11	0.8
12	-7.3
13	-7.3
14	0
Q201	
E	0
C	4.9
B	1.7
Q202	
1	2.6
2	3.2
3	0
4	15.0
5	5.3
6	5.9
Q203	
E	10.8
C	14.9
B	11.4
Q204	
E	1.2
C	4.9
B	1.8
Q205	
E	1.8
C	4.8
B	2.3

<E. VF for GR-HF700>

MODE /PIN	EE
IC1	
1	0
2	4.9
3	2.4
4	0
5	1.9
6	0
7	0
8	4.5
9	4.4
10	0
11	1.9
12	4.5
13	2.8
14	1.8
15	1.8
16	3.1
Q1	
E	2.2
C	-15.2
B	1.7
Q2	
E	0
C	4.5
B	0
Q3	
E	0
C	0
B	0.3

<E. VF for GR-HF900>

MODE /PIN	EE
IC101	
1	0
2	0
3	0
4	0
5	4.3
6	4.4
7	4.8
8	4.9
IC102	
1	0.5
2	0
3	0.4
4	0.5
5	4.8
IC103	
1	0.7
2	2.3
3	0.5
4	1.4
5	0.4
6	2.4
7	0
8	0
9	4.9
10	4.9
11	0
12	2.4
13	0
14	0.6
15	0
16	2.4
IC201	
1	2.3
2	4.2
3	2.4
4	0.6
5	2.7
6	2.7
7	4.3
8	0.7
9	2.1
10	2.1
11	1.1
12	4.0
13	4.7
14	4.7
15	1.8
16	4.6
17	0
18	0
19	2.4
20	6.0
21	2.4
22	6.1
23	2.5
24	6.1
25	12.0
26	2.6
27	2.3
28	2.3
29	2.4
30	1.9
31	2.3
32	2.2
33	1.2
34	2.3
35	2.3
36	0.5
37	0.5
38	2.4
39	0
40	0
41	0
42	2.5
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4.28 WAVEFORMS

— SYSCON —

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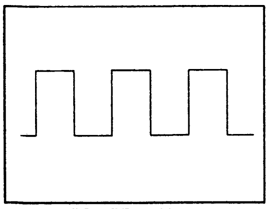
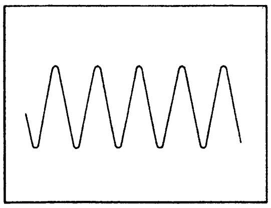


REC/PB 0.2Vp-p
10mV/0.2msec/DIV

WF2 IC1-90



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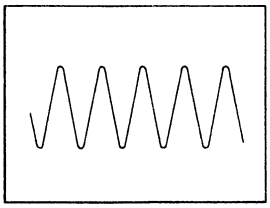

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— MDA —

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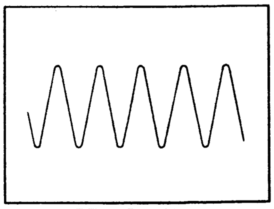

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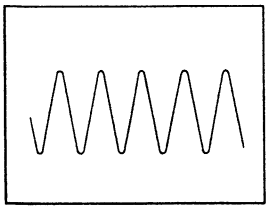

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0.1V/0.2msec/DIV

— PROCESS&Y/C —

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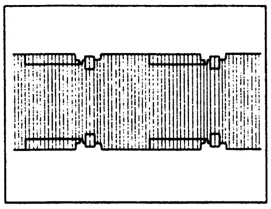

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50mV/5msec/DIV

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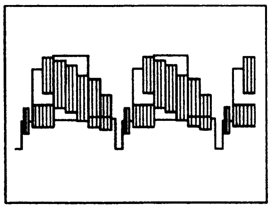
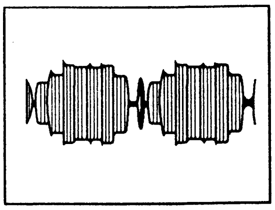


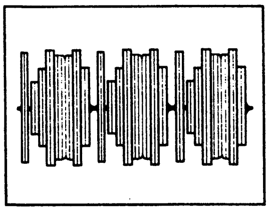
REC2.3Vp-p,PB2.0Vp-p
0.1V/20μ sec/DIV

WF3 IC501-57



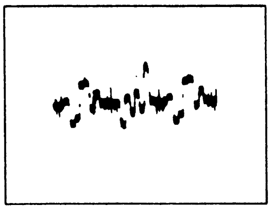
PB0.1Vp-p
5mV/20μ sec/DIV

WF4 IC501-60



REC0.3Vp-p
10mV/20μ sec/DIV

WF5 IC501-94



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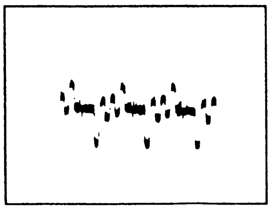
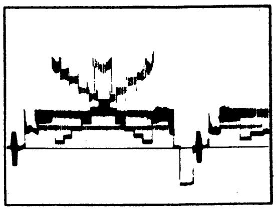
WF6 IC501-96



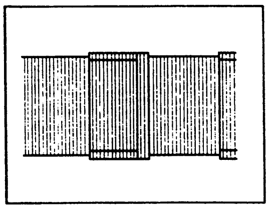
0.2Vp-p
10mV/50μ sec/DIV

WF7 IC501-116



1.3Vp-p
20mV/20μ sec/DIV

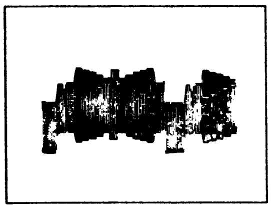
WF8 IC502-10



PB0.6Vp-p
20mV/1msec/DIV

— CCD —

WF1 CN201-4



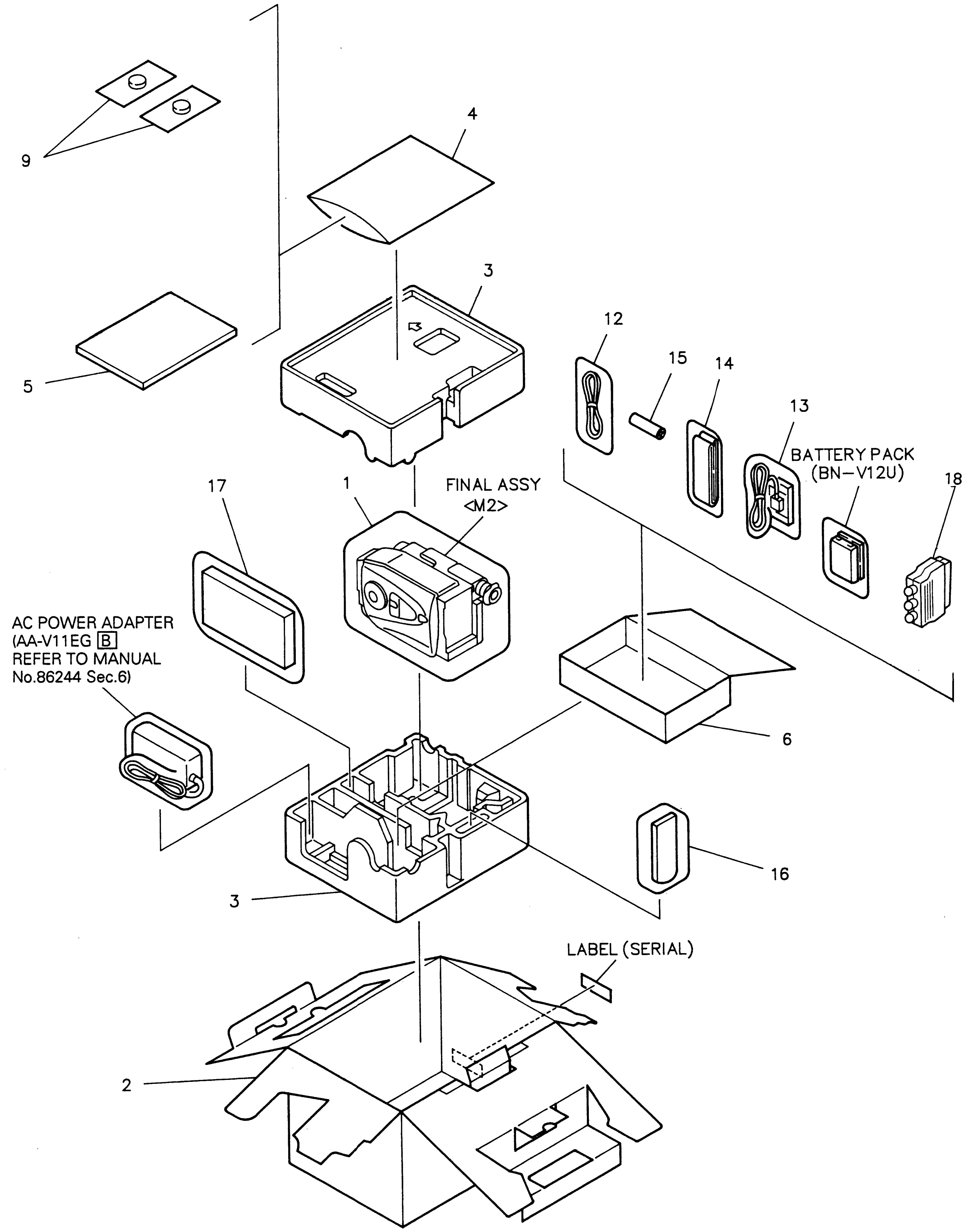
0.5Vp-p
20mV/20μ sec/DIV

SECTION 5
PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

5.1 PACKING ASSEMBLY <M1>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BATTERY PACK
(BN–V12U)
18
17
1
FINAL ASSY
<M2>
AC POWER ADAPTER
(AA-V11EG B
REFER TO MANUAL
No.86244 Sec.6)
6
16
3
LABEL (SERIAL)
2

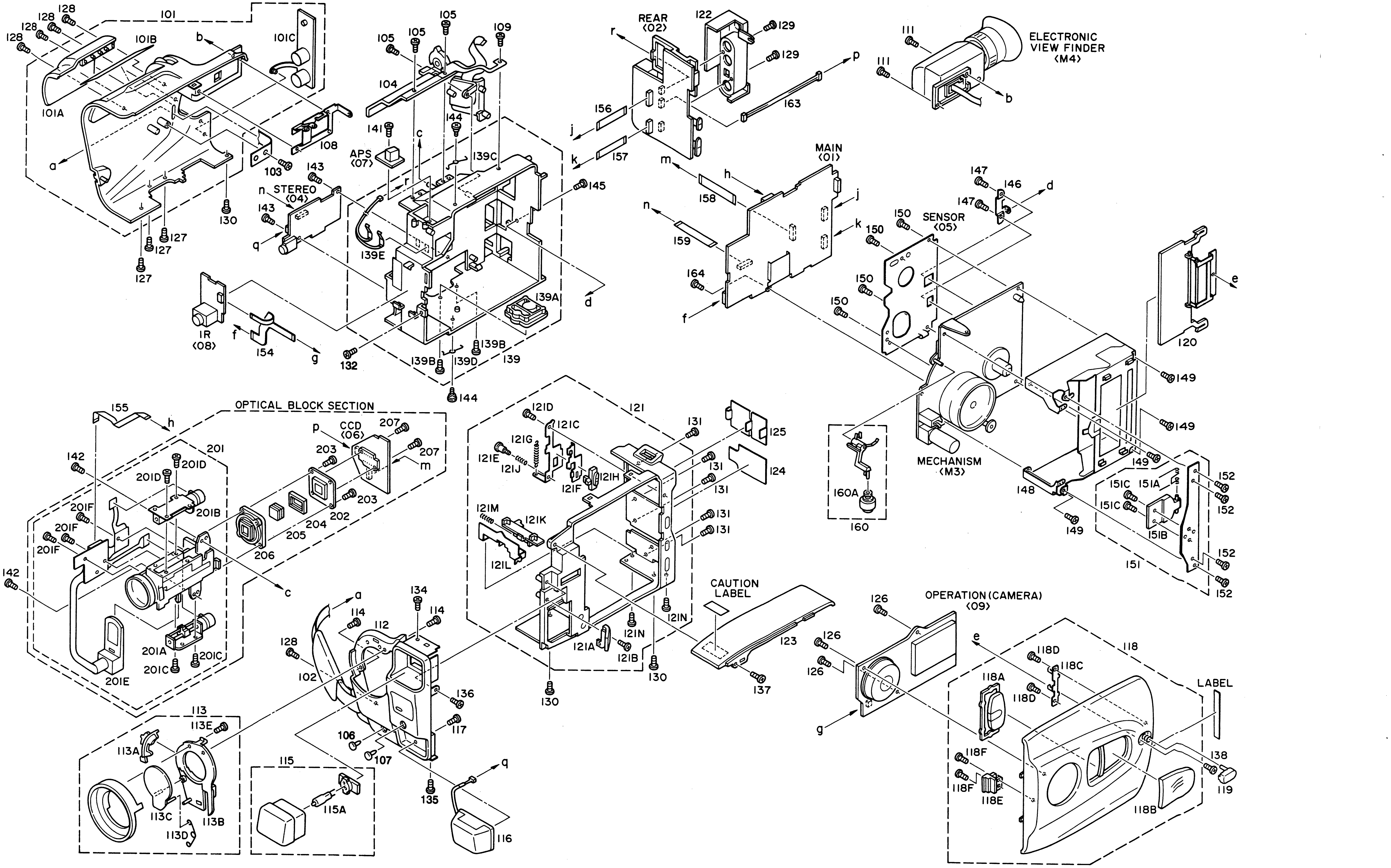
****

PACKING ASSEMBLY <M1>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	1	YQM30021-32	POLY BAG
	2	YQ31868-12	PACKING CASE,HF700EG
		YQ31868-14	PACKING CASE,HF900EG
	3	YQ31869A-2	CUSHION ASSY
	4	YQM30061-2	POLY BAG
⚠	5	YU30052-455	INSTRUCTIONS*
	6	YQ20865	ACCESSORY CASE
⚠	9	PECA0903	LI BATTERY,X2
	12	PEAC0368-150	CABLE ASSY, EDITING CABLE
	13	PEAC0134-01-04	DC PLUG CORD
	14	YQ10188A-1	S STRAP ASSY
	15	R6PRPA-2ST	BATTERY
	16	YQ20710C	REMOTE CONTROLLER
	17	YQ31963A-3	CASSETTE ADAPTER ASSY
	18	PEMC1103	CONNECTOR

*INSTRUCTIONS
ENGLISH
FRENCH
GERMAN
SPANISH
DUTCH
SWEDISH
ITALIAN
DANISH
FINNISH

5.2 FINAL ASSEMBLY <M2>



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CAUTION
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118B

****

FINAL ASSEMBLY <M2>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
⚠	101	YQ10522AP	LOWER CASE ASSY
	101A	YQ31804-4	D.COVER
	101B	YQ31806-12	SHEET
	101C	YQ31850	CAP(JACK)
	102	YQ20824-2	GRIP BELT
	103	YQM30032-42	SPECIAL SCREW,M2.6X6
	104	YQ10518-3-4	OPERATION UNIT
	105	YQM30032-60	SPECIAL SCREW,X3 M2X5
	106	YQ43518	CAP(JACK)
	107	YQ43518	CAP(JACK)
	108	YQ31981	BRACKET(VF)
	109	YQM30032-59	SPECIAL SCREW,M2X2
	111	YQM30032-5-2	SPECIAL SCREW,X2 M2X6
⚠	112	YQ10524D-3	FRONT COVER ASSY
	113	YQ31847B	HOOD ASSY
	113A	YQ31811-2	KNOB(RING)
	113B	YQ31812	GUIDE
	113C	YQ43798	SHUTTER
	113D	YQ43799	TORSION SPRING
	113E	YQM30032-60	SPECIAL SCREW,M2X5
	114	YQM30032-61	SPECIAL SCREW,X2 M2X6
⚠	115	YQ20802-2	DC LIGHT
	115A	YQ20645-001	VIDEO LIGHT BLUB
	116	YQ20810-1-1	MICROPHONE
	117	YQM30032-61	SPECIAL SCREW,M2X6
⚠	118	YQ10526G-6	CASSETTE COVER ASSY,HF700EG
⚠		YQ10526H-6	CASSETTE COVER ASSY,HF900EG
	118A	YQ31813-2	BUTTON(SELECT)
	118B	YQ31816-2	WINDOW(LCD)
	118C	YQ43800-1-1	BRACKET(C.LOCK)
	118D	YQM30032-4-2	SPECIAL SCREW,X2 M2X6
	118E	YQ43802-1-2	HINGE(C.COVER)
	118F	YQM30032-4-2	SPECIAL SCREW,X2 M2X6
	119	YQ31815-2-2	BUTTON(PUSH)
	120	YQ31822A-1	CASS.COVER INSIDE ASSY
⚠	121	YQ10528E-1	UPPER CASE ASSY
	121A	YQ31818	HINGE(UPPER)
	121B	YQM30032-4-2	SPECIAL SCREW,M2X6
	121C	YQ43803	BRACKET(LOCK)
	121D	YQM30032-44	SPECIAL SCREW,M2X4
	121E	YQM30060-6	SPECIAL SCREW
	121F	YQ43804	BRACKET(SLIDE)
	121G	YQM30001-66	TENSION SPRING
	121H	YQ31842-2	BUTTON(EJECT)
	121J	YQM30002-45	COMPRESSION SPRING
	121K	YQ31819-2	KNOB(B.RELEASE)
	121L	YQ31820	BRACKET(B.RE)
	121M	YQM30002-44	COMPRESSION SPRING
	121N	YQM30032-1-2	SPECIAL SCREW,X2 M2X3
⚠	122	YQ20814-4-2	COVER(JACK)
⚠	123	YQ31864H-4	TOP COVER ASSY
⚠	124	YQ31848-2	SHEET(BATT.)
	125	YQ31821	CAP(LITHIUM)
	126	YQM30032-61	SPECIAL SCREW,X3 M2X6
	127	YQM30032-61	SPECIAL SCREW,X3 M2X6
	128	YQM30032-61	SPECIAL SCREW,X5 M2X6
	129	YQM30032-61	SPECIAL SCREW,X2 M2X6
	130	YQM30032-61	SPECIAL SCREW,X3 M2X6
	131	YQM30032-61	SPECIAL SCREW,X5 M2X6
	132	YQM30032-61	SPECIAL SCREW,M2X6
	134	YQM30032-61	SPECIAL SCREW,M2X6
	135	YQM30032-61	SPECIAL SCREW,M2X6
	136	YQM30032-61	SPECIAL SCREW,M2X6
	137	YQM30032-61	SPECIAL SCREW,M2X6
	138	YQM30032-3-2	SPECIAL SCREW,M2X5
⚠	139	YQ10530A-1	FRAME ASSY
	139A	YQ31843	BASE
	139B	YQM30032-4-2	SPECIAL SCREW,X2 M2X6
	139C	YQ43543	SPRING(TOR.1)
	139D	YQ43555	SPRING(TOR.2)
	139E	YQ43810	CONTACT(LIGHT),X2
	141	YQM30032-60	SPECIAL SCREW,M2X5
	142	YQM30032-60	SPECIAL SCREW,X2 M2X5
	143	YQM30032-60	SPECIAL SCREW,X2 M2X5
	144	YQ43545	SPECIAL SCREW,X2
	145	YQM30032-3-2	SPECIAL SCREW,M2X5
	146	YQ43544	BRACKET(MECHA)
	147	SPSH1725Z	SCREW,X2
	148	YQ31752A-2	CASSETTE HOUSING ASSY
	149	SPSH1725M	SCREW,X4
	150	SPSH1730M	SCREW,X4
	151	YQ31762B	FRONT FRAME ASSY
	151A	YQ44144	TAPE GUIDE
	151B	YQ31794-2	TAPE GUIDE HOLDER
	151C	SPSH1720M	SCREW,X2
	152	SPSH1725Z	SCREW,X4
	154	PEWR0767	FPC
	155	PEWR0787	FFC
	156	PEWR0788	FFC
	157	PEWR0786	FFC
	158	PEWR0771	FFC
	159	PEWR0788	FFC
	160	YQ44027A-5	CLEANER ASSY
	160A	YQ44109A-2	CLEANER ROLLER ASSY
	163	ML-Y00720A	CCD WIRE
	164	SPSH1720M	SCREW

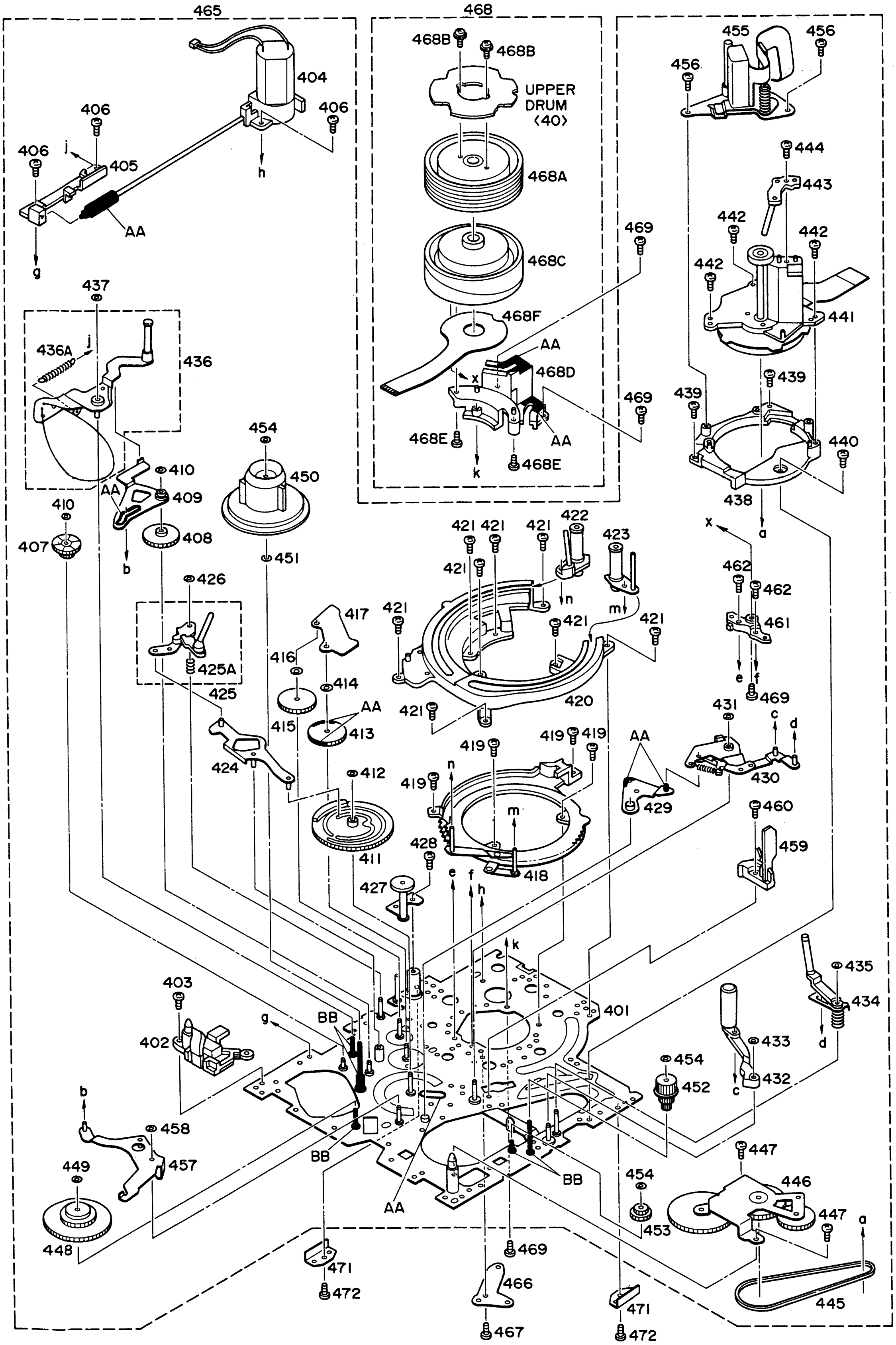
– OPTICAL BLOCK SECTION –

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	201	YU30787-1-1	OP BLOCK ASSY
	201A	YU30787-002	FOCUS MOTOR UNIT
	201B	YU30787-001	ZOOM MOTOR UNIT
	201C	YU30787-010	SCREW,X2
	201D	YU30787-010	SCREW,X2
	201E	YU30787-006	IRIS FPC ASSY
	201F	YU30787-010	SCREW,X3
	202	YS40113D	CCD BASE ASSY
	203	SPSN2090Z	SCREW,X2
	204	YQ31844	SPACER RUBBER
	205	YU42079	OP LOW PASS FILTER
	206	YQ20823	CCD SPACER
	207	SPSP2006Z	SCREW,X2

5.3 MECHANISM ASSEMBLY <M3>

BEWARE OF BOGUS PARTS

Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.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Classifi-cation	Part No.	Symbol in drawing
Grease	KYODO-SH-P	AA
Oil	YTU94027	BB

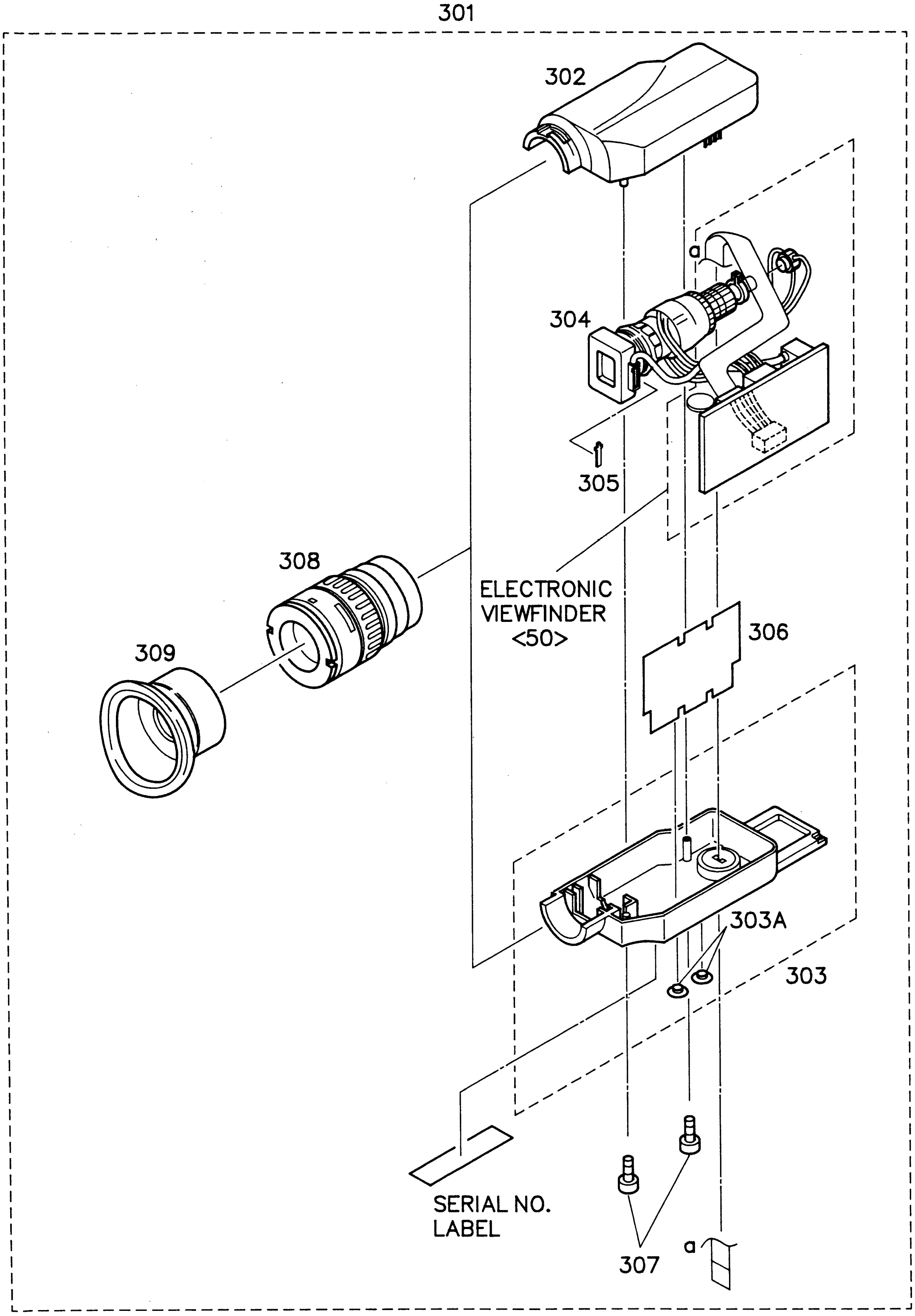
NOTE: The section marked in AA and BB indicate lubrication and greasing areas.

****

MECHANISM ASSEMBLY <M3>

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
401	YQ20790A-5	MAIN DECK ASSY
402	YQ43618A-2	CASS.GUIDE(L) ASSY
403	SPSH1740Z	SCREW
404	YQ31856A-1	MOTOR BRACKET ASSY
405	YQ20793	WORM BRACKET
406	SPSH1740Z	SCREW,X3
407	YQ31783	WHEEL GEAR
408	YQ43627	MIDDLE GEAR
409	YQ43849A-1	CANCEL LEVER ASSY
410	PQM30017-27	SLIT WASHER,X2
411	YQ20827	CONTROL CAM
412	PQM30017-25	SLIT WASHER
413	YQ43853A	LOADING GEAR(T) ASSY
414	PQM30017-27	SLIT WASHER
415	YQ43852A	LOADING GEAR(S)ASSY
416	PQM30017-27	SLIT WASHER
417	YQ43634	COVER PLATE
418	YQ43635B	LOADING RING ASSY
419	SPSH1740Z	SCREW,X4
420	YQ10516-1-5	GUIDE RAIL
421	SPSH1730M	SCREW,X8
422	YQ43646A-4	SUPPLY POLE BASE ASSY
423	YQ43654A-6	TAKE-UP POLE BASE ASSY
424	YQ43659A-1	DRIVE LEVER ASSY
425	YQ43663B-5	SLANT ARM ASSY
425A	YQ43670	TOR.SPRING(S)
426	PQM30017-27	SLIT WASHER
427	YQ44126A	ROLLER BASE ASSY
428	SPSH1730M	SCREW
429	YQ43678A	LINK LEVER ASSY
430	YQ43682A-4	LINK ARM ASSY
431	PQM30017-25	SLIT WASHER
432	YQ43691A-3	PINCH ROLLER ARM ASSY
433	PQM30017-25	SLIT WASHER
434	YQ43698A-2	TAKE-UP GUIDE ARM ASSY
435	PQM30017-27	SLIT WASHER
436	YQ43844A-9	TENSION ARM ASSY
436A	YQ43848-1-1	TENSION SPRING
437	PQM30017-27	SLIT WASHER
438	YQ20797-1-1	MOTOR BASE
439	SPSH1740Z	SCREW,X2
440	SSSH1730M	SCREW
441	YU42048-1-2	CAPSTAN MOTOR
442	SPSN1755M	SCREW,X3
443	YQ43708A-2	SLANT POLE BASE ASSY
444	SPSN1755M	SCREW
445	YQ43710	TIMING BELT
446	YQ43711B-5	CENTER PULLEY UNIT
447	SPSH1730M	SCREW,X2
448	YQ43729A	SUPPLY CLUCH ASSY
449	PQM30017-27	SLIT WASHER
450	YQ31861-1-5	REEL DISK
451	Q03093-835	WASHER
452	YQ31787	TAKE-UP GEAR
453	YQ43737	BRAKE SUB GEAR
454	PQM30017-27	SLIT WASHER,X3
455	YQ43738A-7	A/C HEAD UNIT
456	SPSN1750Z	SCREW,X2
457	YQ43743A-1	EJECT LEVER ASSY
458	PQM30017-27	SLIT WASHER
459	YQ31833-1-1	LED GUIDE
460	SPSH1730M	SCREW
461	YQ43818	DRUM SPACER
462	SPSH1740Z	SCREW,X2
465	YMA0016A	MECHA(A) ASSY
466	YU42051	BRUSH
467	SPSH1720M	SCREW
468	YDV2071A	DRUM ASSY
468A	YDM2085C	UPPER DRUM ASSY
468B	YDM4031	SCREW,X2
468C	YDM2086A	LOWER DRUM ASSY
468D	YDM1003-1-4	CATCHER
468E	SPSH1730M	SCREW,X2
468F	YDM2081	OUT PUT FPC
469	SPSH1740Z	SCREW,X4
471	YQ43779	SIDE BRAKET,X2
472	SPSH1720M	SCREW,X2

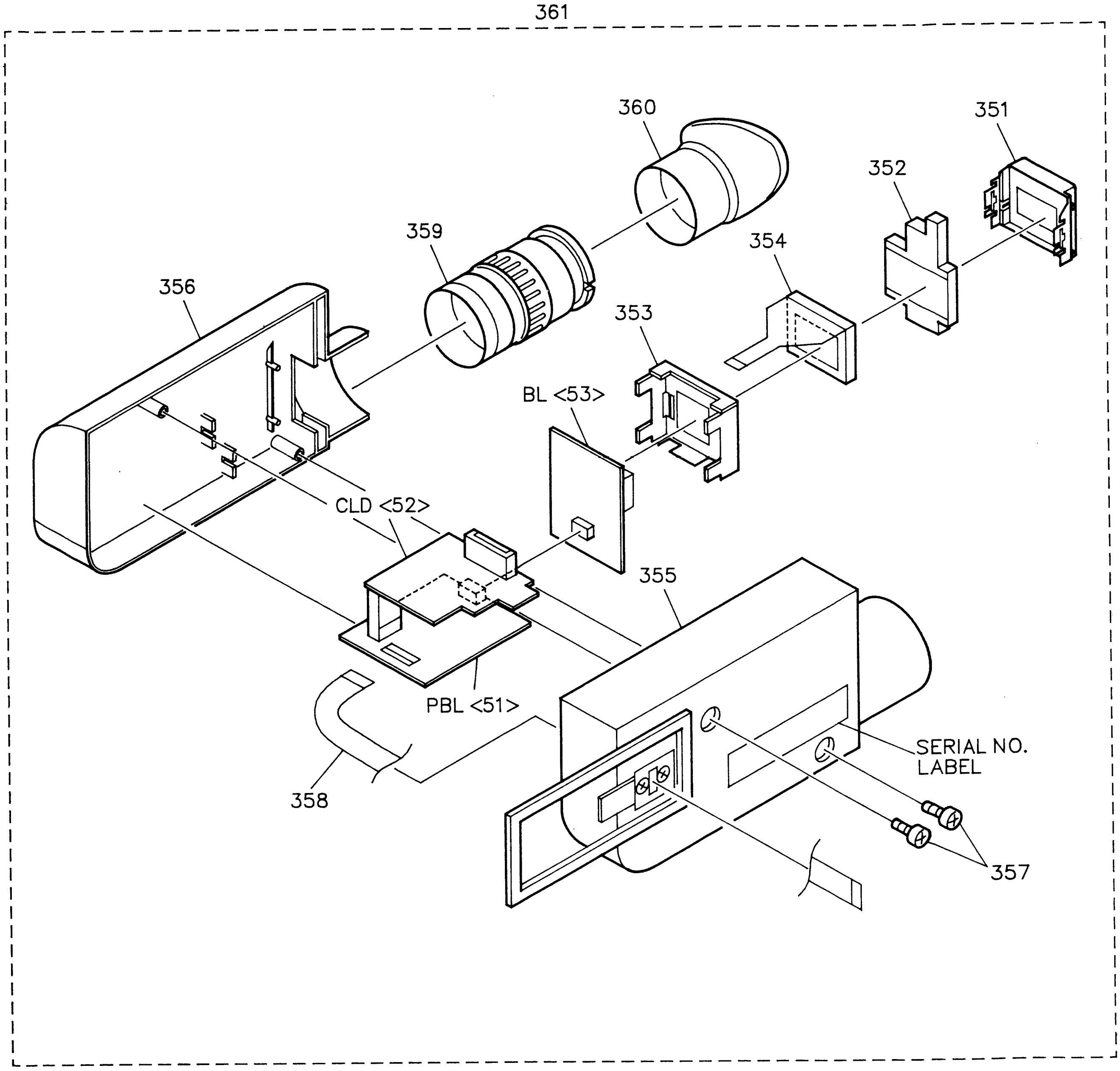
5.4 ELECTRONIC VIEWFINDER ASSEMBLY <M4> [GR-HF700EG]


301
302
304
a
305
308
ELECTRONIC
VIEWFINDER
<50>
306
309
303A
303
SERIAL NO.
LABEL
307
a

ELECTRONIC VIEWFINDER ASSEMBLY (GR-HF700EG) <M4>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
⚠	301	YQ31803C	E.VF ASSY
⚠	302	YQ10534-2	TOP CASE ASSY
⚠	303	YQ31841B	BOTTOM CASE ASSY
	303A	YQ44018	CAP,X2
⚠	304	YQ31803-001	CRT/DY ASSY
⚠	305	YU30181-014	HV COVER
	306	YQ31803-100	INSULATOR
	307	YU30045-014	SCREW,X2 M1.7X5
	308	YQ31803-200	LENS ASSY
	309	YQ31803-201	EYE CAP

5.5 ELECTRONIC VIEWFINDER ASSEMBLY <M4> [GR-HF900EG]


361
360
351
352
359
354
356
353
BL <53>
CLD <52>
355
PBL <51>
SERIAL NO. LABEL
358
357

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION

* *

ELECTRONIC VIEWFINDER ASSEMBLY (GR-HF900EG)< M4 >

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	351	YQ31801-1-1	HOLDER(LCD)
	352	YQ43792	WINDOW(LCD)
	353	YQ31802	HOLDER(LAMP)
	354	PEDP0177	LCD PANEL
⚠	355	YQ31958B	BOTTOM CASE ASSY
⚠	356	YQ31932E	TOP CASE ASSY
	357	SPSN2080M	SCREW,X2
	358	PEWR0775	FPC
	359	YQ31803-200	LENS ASSY
	360	YQ31803-201	EYE CAP
	361	YS20782C	E.VF ASSY

5.6 ELECTRICAL PARTS LIST

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MAIN BOARD ASSEMBLY <01>

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
PWBA	YB10131G-03	MAIN BOARD ASSY,HF900EG
	YB10131H-03	MAIN BOARD ASSY,HF700EG
IC1	M37771M6A160HP	IC
	or M37771M6A158HP	IC
IC2	UPD6462GS-902-X	IC
IC4	XRU4584BF	IC
IC5	S-8423PFS-X	IC
IC6	BA6417F	IC
IC301	VC5035-XE	IC
IC351	BA6862FS	IC
IC401	BA7751AFS	IC
IC501	JCY0050	IC
IC502	M52364FP	IC
IC503	MN3867S	IC
IC601	AN3352FHP	IC
IC602	TC7WU04FU	IC
IC603	MM1165ZM	IC
IC801	XRU4053BCF	IC
IC802	XRA10324AFV-XE	IC
IC803	XRA10358F	IC
	or UPC358GR	IC
IC804	XRA10324AFV-XE	IC
IC805	XRA10324AFV-XE	IC
IC901	UPD78054GC-062	IC
IC902	JCY0007-1-XE	IC
IC903	X25C02S-XE	IC
IC904	S-81250HG-RD-X	IC
IC905	XRA10324AFV-XE	IC
IC906	MC14011BDT	IC
	or TC4011BFS	IC
IC907	TB6504F	IC
IC908	TB6504F	IC
IC909	PST9140N	IC
IC910	UPC358GR	IC
IC911	TC4W66F	IC
Q1	2SA1576(QRS)	TRANSISTOR
Q2	DTC114EU	TRANSISTOR
Q3	DTA114EU	TRANSISTOR
Q5	DTA114EU	TRANSISTOR
Q6	DTC114EU	TRANSISTOR
Q7	2SA1576(QRS)	TRANSISTOR
Q10	DTC125TU	TRANSISTOR
Q201	DTC144EE	TRANSISTOR
	or UN9213	TRANSISTOR
Q202	2SC4617(RS)	TRANSISTOR
Q203	DTA114EE	TRANSISTOR
	or UN9111	TRANSISTOR
Q351	MDC02	TRANSISTOR
Q401	DTA123EE	TRANSISTOR
	or UN911V	TRANSISTOR
Q402	DTA143EE	TRANSISTOR
	or UN911L	TRANSISTOR
Q403	UMW1N	PAIR TRANSISTOR
	or XP1501	TRANSISTOR
Q404	DTA124EE	TRANSISTOR
	or UN9112	TRANSISTOR
Q405	DTC144EE	TRANSISTOR
	or UN9213	TRANSISTOR
Q408	2SC4097(QR)	TRANSISTOR
Q503	2SC4617(QRS)	TRANSISTOR
Q504	2SA1774(QRS)	TRANSISTOR
Q505	2SA1774(QRS)	TRANSISTOR
Q506	2SA1774(QRS)	TRANSISTOR
Q601	DTC144EE	TRANSISTOR
Q603	2SA1577(QR)	TRANSISTOR
Q604	2SA1577(QR)	TRANSISTOR
Q605	UMG2N	PAIR TRANSISTOR
Q606	XN4504	TRANSISTOR
Q609	2SC2412K(QR)	TRANSISTOR
Q610	2SC2412K(QR)	TRANSISTOR
Q611	2SC2412K(QR)	TRANSISTOR
Q613	XN4504	TRANSISTOR
Q614	2SA1577(QR)	TRANSISTOR
Q615	2SC2412K(QR)	TRANSISTOR
Q616	2SA1577(QR)	TRANSISTOR
Q617	2SC4617(QRS)	TRANSISTOR
Q619	2SC4617(QRS)	TRANSISTOR
Q620	2SC4617(QRS)	TRANSISTOR
Q621	DTC144EE	TRANSISTOR
Q622	DTA144EE	TRANSISTOR
Q701	2SC4617(QRS)	TRANSISTOR
Q702	2SC4617(QRS)	TRANSISTOR
Q703	2SC4617(QRS)	TRANSISTOR
Q704	2SC4617(QRS)	TRANSISTOR
Q706	DTC144EE	TRANSISTOR
	or UN9213	TRANSISTOR
Q781	DTA143EU	TRANSISTOR
Q782	2SC4081(R)	TRANSISTOR
Q783	2SC4081(R)	TRANSISTOR
Q784	2SC4081(R)	TRANSISTOR
Q802	DTC114TU	TRANSISTOR
Q803	XP1216	TRANSISTOR
	or UMG3N	PAIR TRANSISTOR
Q804	DTC114TU	TRANSISTOR
Q805	XP1216	TRANSISTOR
	or UMG3N	PAIR TRANSISTOR
Q810	2SA1774(QRS)	TRANSISTOR
Q811	2SA1774(QRS)	TRANSISTOR
Q812	2SA1774(QRS)	TRANSISTOR
Q901	DTC144WU	TRANSISTOR
Q902	DTA114EU	TRANSISTOR
Q904	XP1216	TRANSISTOR
	or UMG3N	PAIR TRANSISTOR
Q905	XP5601	TRANSISTOR
Q906	XP5601	TRANSISTOR
Q907	XP5601	TRANSISTOR
D2	RD22M(B1-3)-X	ZENER DIODE
D3	1SS355	DIODE
D301	MA132WK	DIODE
D502	DAN222	DIODE
D503	DAN222	DIODE
D504	DAN222	DIODE,HF900EG
D505	DAN222	DIODE
D601	MA132WA	DIODE
D602	DA227	DIODE
D603	DAN222	DIODE
D604	DAP222	DIODE
D801	1SS355	DIODE
D802	1SS355	DIODE

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
D803	DAN202U	DIODE	
D901	1SS355	DIODE	
D902	1SS355	DIODE	
D903	1SS355	DIODE	
D904	MA30(A)	DIODE	
DA1	DAP202U	DIODE	
DA2	DAP202U	DIODE	
DA3	DAP202U	DIODE	
R2	NRSA63J-473N	RESISTOR	47kΩ,1/16W
R3	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R4	NRSA63J-473N	RESISTOR	47kΩ,1/16W
R5	NRSA63J-105N	RESISTOR	1MΩ,1/16W
R6	NRSA63J-221N	RESISTOR	220Ω,1/16W
R7	NRSA63J-124N	RESISTOR	120kΩ,1/16W
R8	NRVA63D-623N	MF RESISTOR	62kΩ,1/16W
R9	NRSA63J-302N	RESISTOR	3kΩ,1/16W
R10	NRVA63D-683N	MF RESISTOR	68kΩ,1/16W
R11	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R12	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R13	NRSA63J-223N	RESISTOR	22kΩ,1/16W
R14	NRSA63J-474N	RESISTOR	470kΩ,1/16W
R22	NRSA63J-473N	RESISTOR	47kΩ,1/16W
R23	NRSA63J-685N	RESISTOR	6.8MΩ,1/16W
R24	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R25	NRSA63J-105N	RESISTOR	1MΩ,1/16W
R26	NRSA63J-221N	RESISTOR	220Ω,1/16W
R27	NRSA63J-122N	RESISTOR	1.2kΩ,1/16W
R28	NRSA63J-751N	RESISTOR	750Ω,1/16W
R29	NRSA63J-751N	RESISTOR	750Ω,1/16W
R30	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
R31	NRSA63J-821N	RESISTOR	820Ω,1/16W
R32	NRSA63J-101N	RESISTOR	100Ω,1/16W
R36	NRSA63J-153N	RESISTOR	15kΩ,1/16W
R37	NRSA63J-683N	RESISTOR	68kΩ,1/16W
R38	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R39	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R40	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R41	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R43	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R53	NRSA63J-751N	RESISTOR	750Ω,1/16W
R60	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R61	NRSA63J-332N	RESISTOR,HF700EG	3.3kΩ,1/16W
	NRSA63J-622N	RESISTOR,HF900EG	6.2kΩ,1/16W
R63	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R67	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R69	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R70	NRSA63J-474N	RESISTOR	470kΩ,1/16W
R71	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R72	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R73	NRSA63J-391N	RESISTOR	390Ω,1/16W
R201	NRSA63J-332N	RESISTOR	3.3kΩ,1/16W
R202	NRSA63J-332N	RESISTOR	3.3kΩ,1/16W
R203	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R204	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R205	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R206	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R207	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R208	NRSA63J-273N	RESISTOR	27kΩ,1/16W
R209	NRSA63J-331N	RESISTOR	330Ω,1/16W
R210	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R211	NRSA63J-561N	RESISTOR	560Ω,1/16W
R212	NRSA63J-102N	RESISTOR	1kΩ,1/16W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R213	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R214	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R215	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R216	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R301	NRSA63J-2R2N	RESISTOR	2.2Ω,1/16W
R302	NRSA63J-2R2N	RESISTOR	2.2Ω,1/16W
R303	NRSA63J-2R2N	RESISTOR	2.2Ω,1/16W
R304	NRSA63J-121N	RESISTOR	120Ω,1/16W
R305	NRSA63J-393N	RESISTOR	39kΩ,1/16W
R306	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R307	NRSA63J-154N	RESISTOR	150kΩ,1/16W
R308	NRSA63J-153N	RESISTOR	15kΩ,1/16W
R310	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R311	NRSA63J-333N	RESISTOR	33kΩ,1/16W
R312	NRSA63J-473N	RESISTOR	47kΩ,1/16W
R313	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R314	YU41353-R68N	RESISTOR	0.68Ω,1/2W
R351	NRSA63J-474N	RESISTOR	470kΩ,1/16W
R352	NRSA63J-154N	RESISTOR	150kΩ,1/16W
R353	NRSA63J-104N	RESISTOR	100kΩ,1/16W
R354	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R355	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R356	NRSA63J-104N	RESISTOR	100kΩ,1/16W
R357	NRSA63J-153N	RESISTOR	15kΩ,1/16W
R358	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R359	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R360	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R361	NRSA63J-104N	RESISTOR	100kΩ,1/16W
R362	YU41353-R68N	RESISTOR	0.68Ω,1/2W
R401	NRVA63D-392N	MF RESISTOR	3.9kΩ,1/16W
R402	NRVA63D-272N	MF RESISTOR	2.7kΩ,1/16W
R403	NRVA63D-152N	MF RESISTOR	1.5kΩ,1/16W
R404	NRSA63J-820N	RESISTOR	82Ω,1/16W
R405	NRSA63J-820N	RESISTOR	82Ω,1/16W
R406	NRSA63J-820N	RESISTOR	82Ω,1/16W
R409	NRSA63J-100N	RESISTOR	10Ω,1/16W
R410	NRVA63D-103N	MF RESISTOR	10kΩ,1/16W
R411	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R412	NRSA63J-272N	RESISTOR	2.7kΩ,1/16W
R413	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R414	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R415	NRSA63J-132N	RESISTOR	1.3kΩ,1/16W
R417	NRSA63J-822N	RESISTOR	8.2kΩ,1/16W
R418	NRSA63J-104N	RESISTOR	100kΩ,1/16W
R420	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R421	NRSA63J-823N	RESISTOR	82kΩ,1/16W
R422	NRSA63J-561N	RESISTOR	560Ω,1/16W
R423	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
R424	NRSA63J-822N	RESISTOR	8.2kΩ,1/16W
R425	NRSA63J-334N	RESISTOR	330kΩ,1/16W
R426	NRSA63J-470N	RESISTOR	47Ω,1/16W
R428	NRSA63J-155N	RESISTOR	1.5MΩ,1/16W
R429	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R430	NRSA63J-223N	RESISTOR	22kΩ,1/16W
R431	NRSA63J-132N	RESISTOR	1.3kΩ,1/16W
R443	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R450	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R451	NRVA63D-392N	MF RESISTOR	3.9kΩ,1/16W
R452	NRVA63D-222N	MF RESISTOR	2.2kΩ,1/16W
R453	NRVA63D-152N	MF RESESTOR	1.5kΩ,1/16W
R454	NRVA63D-302N	MF RESISTOR	3kΩ,1/16W
R455	NRSA63J-104N	RESISTOR	100kΩ,1/16W

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
R456	NRSA63J-3R3N	RESISTOR	3.3Ω,1/16W
R457	NRSA63J-153N	RESISTOR	15kΩ,1/16W
R458	NRSA63J-303N	RESISTOR	30kΩ,1/16W
R459	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R503	NRSA63J-105N	RESISTOR	1MΩ,1/16W
R504	NRSA63J-154N	RESISTOR	150kΩ,1/16W
R505	NRSA63J-681N	RESISTOR	680Ω,1/16W
R506	NRSA63J-471N	RESISTOR	470Ω,1/16W
R507	NRSA63J-182N	RESISTOR	1.8kΩ,1/16W
R508	NRSA63J-223N	RESISTOR	22kΩ,1/16W
R509	NRSA63J-152N	RESISTOR	1.5kΩ,1/16W
R510	NRSA63J-391N	RESISTOR	390Ω,1/16W
R511	NRSA63J-122N	RESISTOR	1.2kΩ,1/16W
R514	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R516	NRSA63J-331N	RESISTOR	330Ω,1/16W
R518	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R519	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R520	NRSA63J-682N	RESISTOR	6.8kΩ,1/16W
R521	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R522	NRVA63D-221N	RESISTOR	220Ω,1/16W
R525	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R526	NRSA63J-431N	RESISTOR	430Ω,1/16W
R527	NRSA63J-102N	RESISTOR,HF700EG	1kΩ,1/16W
	NRSA63J-821N	RESISTOR,HF900EG	820Ω,1/16W
R528	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R529	NRSA63J-431N	RESISTOR	430Ω,1/16W
R530	NRSA63J-102N	RESISTOR,HF700EG	1kΩ,1/16W
	NRSA63J-821N	RESISTOR,HF900EG	820Ω,1/16W
R531	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R532	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R533	NRSA63J-0R0N	RESISTOR,HF900EG	0Ω,1/16W
R534	NRSA63J-0R0N	RESISTOR,HF900EG	0Ω,1/16W
R535	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R536	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R537	NRSA63J-123N	RESISTOR	12kΩ,1/16W
R538	NRSA63J-822N	RESISTOR	8.2kΩ,1/16W
R541	NRSA63J-103N	RESISTOR,HF900EG	10kΩ,1/16W
R543	NRVA63D-221N	RESISTOR	220Ω,1/16W
R544	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R545	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R561	NRSA63J-821N	RESISTOR	820Ω,1/16W
R563	NRSA63J-471N	RESISTOR	470Ω,1/16W
R564	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R565	NRSA63J-391N	RESISTOR	390Ω,1/16W
R566	NRSA63J-471N	RESISTOR	470Ω,1/16W
R567	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
R568	NRSA63J-471N	RESISTOR	470Ω,1/16W
R569	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R570	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R571	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R573	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R576	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R577	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R601	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R602	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R603	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R604	NRSA63J-152N	RESISTOR	1.5kΩ,1/16W
R605	NRSA63J-682N	RESISTOR	6.8kΩ,1/16W
R607	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R609	NRSA63J-221N	RESISTOR	220Ω,1/16W
R610	NRSA63J-331N	RESISTOR	330Ω,1/16W
R611	NRSA63J-100N	RESISTOR	10Ω,1/16W
R612	NRSA63J-100N	RESISTOR	10Ω,1/16W
R613	NRSA63J-100N	RESISTOR	10Ω,1/16W
R614	NRSA63J-100N	RESISTOR	10Ω,1/16W
R615	NRSA63J-331N	RESISTOR	330Ω,1/16W
R616	NRSA63J-331N	RESISTOR	330Ω,1/16W
R617	NRSA63J-331N	RESISTOR	330Ω,1/16W
R618	NRSA63J-221N	RESISTOR	220Ω,1/16W
R619	NRSA63J-561N	RESISTOR	560Ω,1/16W
R620	NRSA63J-561N	RESISTOR	560Ω,1/16W
R621	NRSA63J-100N	RESISTOR	10Ω,1/16W
R622	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R623	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R626	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R628	NRSA63J-182N	RESISTOR	1.8kΩ,1/16W
R630	NRSA63J-682N	RESISTOR	6.8kΩ,1/16W
R631	NRSA63J-182N	RESISTOR	1.8kΩ,1/16W
R633	NRSA63J-822N	RESISTOR	8.2kΩ,1/16W
R634	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
R635	NRSA63J-473N	RESISTOR	47kΩ,1/16W
R636	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R637	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R638	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R639	NRSA63J-272N	RESISTOR	2.7kΩ,1/16W
R640	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R641	NRSA63J-272N	RESISTOR	2.7kΩ,1/16W
R642	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R643	NRSA63J-272N	RESISTOR	2.7kΩ,1/16W
R644	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R645	NRSA63J-272N	RESISTOR	2.7kΩ,1/16W
R646	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R647	NRSA63J-272N	RESISTOR	2.7kΩ,1/16W
R648	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R649	NRSA63J-272N	RESISTOR	2.7kΩ,1/16W
R650	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R651	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R652	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R655	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R656	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R657	NRSA63J-473N	RESISTOR	47kΩ,1/16W
R658	NRSA63J-152N	RESISTOR	1.5kΩ,1/16W
R659	NRSA63J-682N	RESISTOR	6.8kΩ,1/16W
R660	NRSA63J-473N	RESISTOR	47kΩ,1/16W
R701	NRSA63J-471N	RESISTOR	470Ω,1/16W
R702	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R703	NRSA63J-122N	RESISTOR	1.2kΩ,1/16W
R708	NRSA63J-203N	RESISTOR	20kΩ,1/16W
R709	NRSA63J-391N	RESISTOR	390Ω,1/16W
R710	NRSA63J-152N	RESISTOR	1.5kΩ,1/16W
R711	NRSA63J-122N	RESISTOR	1.2kΩ,1/16W
R712	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R713	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R714	NRSA63J-471N	RESISTOR	470Ω,1/16W
R715	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R716	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R720	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R721	NRSA63J-822N	RESISTOR	8.2kΩ,1/16W
R726	NRSA63J-122N	RESISTOR	1.2kΩ,1/16W
R727	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R728	NRSA63J-911N	RESISTOR	910Ω,1/16W
R729	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R730	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R731	NRSA63J-221N	RESISTOR	220Ω,1/16W

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	R732	NRSA63J-561N	RESISTOR	560Ω,1/16W
	R733	NRSA63J-152N	RESISTOR	1.5kΩ,1/16W
	R734	NRSA63J-821N	RESISTOR	820Ω,1/16W
	R735	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R736	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R763	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R781	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R783	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R784	NRSA63J-153N	RESISTOR	15kΩ,1/16W
	R785	NRSA63J-473N	RESISTOR	47kΩ,1/16W
	R786	NRSA63J-473N	RESISTOR	47kΩ,1/16W
	R787	NRSA63J-5R6N	RESISTOR	5.6Ω,1/16W
	R788	NRSA63J-5R6N	RESISTOR	5.6Ω,1/16W
	R803	NRSA63J-564N	RESISTOR	560kΩ,1/16W
	R804	NRSA63J-564N	RESISTOR	560kΩ,1/16W
	R807	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R808	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
	R809	NRSA63J-683N	RESISTOR	68kΩ,1/16W
	R810	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R811	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
	R812	NRSA63J-683N	RESISTOR	68kΩ,1/16W
	R813	NRSA63J-153N	RESISTOR	15kΩ,1/16W
	R814	NRSA63J-153N	RESISTOR	15kΩ,1/16W
	R815	NRSA63J-332N	RESISTOR	3.3kΩ,1/16W
	R816	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
	R817	NRSA63J-823N	RESISTOR	82kΩ,1/16W
	R818	NRSA63J-823N	RESISTOR	82kΩ,1/16W
	R819	NRSA63J-332N	RESISTOR	3.3kΩ,1/16W
	R820	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
	R821	NRSA63J-105N	RESISTOR	1MΩ,1/16W
	R822	NRSA63J-105N	RESISTOR	1MΩ,1/16W
	R824	NRSA63J-223N	RESISTOR	22kΩ,1/16W
	R825	NRSA63J-822N	RESISTOR	8.2kΩ,1/16W
	R826	NRSA63J-105N	RESISTOR	1MΩ,1/16W
	R827	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R828	NRSA63J-223N	RESISTOR	22kΩ,1/16W
	R829	NRSA63J-105N	RESISTOR	1MΩ,1/16W
	R831	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R832	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R833	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R834	NRSA63J-823N	RESISTOR	82kΩ,1/16W
	R835	NRSA63J-823N	RESISTOR	82kΩ,1/16W
	R836	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R837	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R838	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R840	NRSA63J-152N	RESISTOR	1.5kΩ,1/16W
	R841	NRSA63J-333N	RESISTOR	33kΩ,1/16W
	R843	NRSA63J-124N	RESISTOR	120kΩ,1/16W
	R844	NRSA63J-683N	RESISTOR	68kΩ,1/16W
	R845	NRSA63J-473N	RESISTOR	47kΩ,1/16W
	R846	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R847	NRSA63J-393N	RESISTOR	39kΩ,1/16W
	R848	NRSA63J-393N	RESISTOR	39kΩ,1/16W
	R851	NRSA63J-823N	RESISTOR	82kΩ,1/16W
	R852	NRSA63J-223N	RESISTOR	22kΩ,1/16W
	R853	NRSA63J-683N	RESISTOR	68kΩ,1/16W
	R854	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R855	NRSA63J-223N	RESISTOR	22kΩ,1/16W
	R856	NRSA63J-682N	RESISTOR	6.8kΩ,1/16W
	R857	NRSA63J-105N	RESISTOR	1MΩ,1/16W
	R858	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
	R859	NRSA63J-105N	RESISTOR	1MΩ,1/16W
	R861	NRSA63J-183N	RESISTOR	18kΩ,1/16W
	R862	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R863	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R864	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R865	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
	R866	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R867	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R868	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R869	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
	R870	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R871	NRSA63J-182N	RESISTOR	1.8kΩ,1/16W
	R873	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R874	NRSA63J-332N	RESISTOR	3.3kΩ,1/16W
	R875	NRSA63J-332N	RESISTOR	3.3kΩ,1/16W
	R877	NRSA63J-182N	RESISTOR	1.8kΩ,1/16W
	R878	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
	R879	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R880	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R881	NRSA63J-273N	RESISTOR	27kΩ,1/16W
	R882	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R883	NRSA63J-561N	RESISTOR	560Ω,1/16W
	R885	NRSA63J-122N	RESISTOR	1.2kΩ,1/16W
	R887	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R891	NRSA63J-243N	RESISTOR	24kΩ,1/16W
	R892	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R893	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R894	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R895	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R896	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R897	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R898	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
	R901	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R902	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R903	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R904	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R905	NRSA63J-241N	RESISTOR	240Ω,1/16W
	R906	NRSA63J-751N	RESISTOR	750Ω,1/16W
	R907	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R908	NRSA63J-682N	RESISTOR	6.8kΩ,1/16W
	R909	NRSA63J-272N	RESISTOR	2.7kΩ,1/16W
	R910	NRSA63J-122N	RESISTOR	1.2kΩ,1/16W
	R911	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R912	NRSA63J-474N	RESISTOR	470kΩ,1/16W
	R913	NRSA63J-153N	RESISTOR	15kΩ,1/16W
	R914	NRSA63J-153N	RESISTOR	15kΩ,1/16W
	R915	NRSA63J-183N	RESISTOR	18kΩ,1/16W
	R916	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
	R917	NRSA63J-683N	RESISTOR	68kΩ,1/16W
	R918	NRSA63J-512N	RESISTOR	5.1kΩ,1/16W
	R919	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R920	NRSA63J-183N	RESISTOR	18kΩ,1/16W
	R921	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R922	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
	R923	NRSA63J-473N	RESISTOR	47kΩ,1/16W
	R924	NRSA63J-333N	RESISTOR	33kΩ,1/16W
	R925	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R926	NRSA63J-272N	RESISTOR	2.7kΩ,1/16W
	R927	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
	R928	NRSA63J-101N	RESISTOR	100Ω,1/16W
	R930	NRSA63J-183N	RESISTOR	18kΩ,1/16W
	R931	NRSA63J-223N	RESISTOR	22kΩ,1/16W
	R932	NRSA63J-103N	RESISTOR	10kΩ,1/16W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R933	NRSA63J-824N	RESISTOR	820kΩ,1/16W
R934	NRSA63J-822N	RESISTOR	8.2kΩ,1/16W
R935	NRSA63J-152N	RESISTOR	1.5kΩ,1/16W
R936	NRSA63J-223N	RESISTOR	22kΩ,1/16W
R937	NRSA63J-104N	RESISTOR	100kΩ,1/16W
R938	NRSA63J-154N	RESISTOR	150kΩ,1/16W
R939	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R940	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R941	NRSA63J-564N	RESISTOR	560kΩ,1/16W
R942	NRSA63J-223N	RESISTOR	22kΩ,1/16W
R945	NRSA63J-104N	RESISTOR	100kΩ,1/16W
R946	NRSA63J-473N	RESISTOR	47kΩ,1/16W
R947	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R948	NRSA63J-101N	RESISTOR	100Ω,1/16W
R949	NRSA63J-105N	RESISTOR	1MΩ,1/16W
R950	NRSA63J-473N	RESISTOR	47kΩ,1/16W
R951	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R952	NRSA63J-223N	RESISTOR	22kΩ,1/16W
R953	NRSA63J-223N	RESISTOR	22kΩ,1/16W
R954	NRSA63J-223N	RESISTOR	22kΩ,1/16W
R955	NRSA63J-223N	RESISTOR	22kΩ,1/16W
R956	NRSA63J-393N	RESISTOR	39kΩ,1/16W
R957	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
R958	NRSA63J-682N	RESISTOR	6.8kΩ,1/16W
R959	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
R960	NRSA63J-223N	RESISTOR	22kΩ,1/16W
R961	NRSA63J-105N	RESISTOR	1MΩ,1/16W
R962	NRSA63J-271N	RESISTOR	270Ω,1/16W
R963	NRSA63J-391N	RESISTOR	390Ω,1/16W
R965	NRSA63J-3R9N	RESISTOR	3.9Ω,1/16W
R966	NRSA63J-3R9N	RESISTOR	3.9Ω,1/16W
R967	NRSA63J-332N	RESISTOR	3.3kΩ,1/16W
R968	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R969	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R970	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R971	NRSA63J-3R9N	RESISTOR	3.9Ω,1/16W
R972	NRSA63J-3R9N	RESISTOR	3.9Ω,1/16W
R973	NRSA63J-332N	RESISTOR	3.3kΩ,1/16W
R974	NRSA63J-331N	RESISTOR	330Ω,1/16W
R975	NRSA63J-331N	RESISTOR	330Ω,1/16W
R978	NRSA63J-334N	RESISTOR	330kΩ,1/16W
R979	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R980	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
R981	NRSA63J-821N	RESISTOR	820Ω,1/16W
R982	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R984	NRSA63J-183N	RESISTOR	18kΩ,1/16W
R985	NRSA63J-912N	RESISTOR	9.1kΩ,1/16W
RA1	PERE0532-104JY	NETWORK RESISTOR	100kΩ,1/16W
RA2	PERE0532-105JY	NETWORK RESISTOR	1MΩ,1/16W
RA3	PERE0560-105JY	NETWORK RESISTOR	1MΩ,1/16W
RA4	PERE0532-472JY	NETWORK RESISTOR	4.7kΩ,1/16W
RA6	PERE0560-222JY	NETWORK RESISTOR	2.2kΩ,1/16W
RA7	PERE0560-222JY	NETWORK RESISTOR	2.2kΩ,1/16W
RA8	PERE0560-473JY	NETWORK RESISTOR	47kΩ,1/16W
RA9	PERE0560-104JY	NETWORK RESISTOR	100kΩ,1/16W
RA10	PERE0560-222JY	NETWORK RESISTOR	2.2kΩ,1/16W
RA11	PERE0532-222JY	NETWORK RESISTOR	2.2kΩ,1/16W
RA12	PERE0560-103JY	NETWORK RESISTOR	10kΩ,1/16W
RA13	PERE0560-222JY	NETWORK RESISTOR	2.2kΩ,1/16W
RA14	PERE0532-103JY	NETWORK RESISTOR	10kΩ,1/16W
RA15	PERE0532-222JY	NETWORK RESISTOR	2.2kΩ,1/16W
RA16	PERE0532-103JY	NETWORK RESISTOR	10kΩ,1/16W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
RA501	PERE0560-102JY	NETWORK RESISTOR	1kΩ,1/16W
RA801	PERE0532-222JY	NETWORK RESISTOR	2.2kΩ,1/16W
RA802	PERE0532-472JY	NETWORK RESISTOR	4.7kΩ,1/16W
RA901	PERE0475-103NY	NETWORK RESISTOR	10kΩ,1/16W
RA902	PERE0560-102JY	NETWORK RESISTOR	1kΩ,1/16W
RA903	PERE0560-102JY	NETWORK RESISTOR	1kΩ,1/16W
RA904	PERE0475-473NY	NETWORK RESISTOR	47kΩ,1/16W
RA905	PERE0475-331NY	NETWORK RESISTOR	330Ω,1/16W
RA906	PERE0475-332NY	NETWORK RESISTOR	3.3kΩ,1/16W
RA907	PERE0475-472NY	NETWORK RESISTOR	4.7kΩ,1/16W
RA908	PERE0560-332JY	NETWORK RESISTOR	3.3kΩ,1/16W
RA909	PERE0475-103NY	NETWORK RESISTOR	10kΩ,1/16W
RA910	PERE0560-472JY	NETWORK RESISTOR	4.7kΩ,1/16W
RA911	PERE0475-332NY	NETWORK RESISTOR	3.3kΩ,1/16W
C1	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C2	NEA71CM-106NZ	E CAPACITOR	10μF,16V
C3	NEA70JM-226NZ	E CAPACITOR	22μF,6.3V
C4	NCB31EK-103A	CAPACITOR	0.01μF,25V
C5	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C6	NEA70JM-226NZ	E CAPACITOR	22μF,6.3V
C7	NEA70JM-226NZ	E CAPACITOR	22μF,6.3V
C8	NCB31HK-102A	CAPACITOR	0.001μF,50V
C9	NCT06CH-101A	CAPACITOR	100pF,50V
C10	NCT06CH-270A	CAPACITOR	27pF,50V
C11	NCT06CH-101A	CAPACITOR	100pF,50V
C12	NCB31EK-103A	CAPACITOR	0.01μF,25V
C13	NCB31EK-103A	CAPACITOR	0.01μF,25V
C14	NCB31EK-472A	CAPACITOR	0.0047μF,25V
C15	NCB31EK-103A	CAPACITOR	0.01μF,25V
C16	NCB31EK-103A	CAPACITOR	0.01μF,25V
C18	NCT06CH-180A	CAPACITOR	18pF,50V
C19	NCT06CH-180A	CAPACITOR	18pF,50V
C21	NCT06CH-100A	CAPACITOR	10pF,50V
C22	NCT06CH-120A	CAPACITOR	12pF,50V
C23	NCB31EK-103A	CAPACITOR	0.01μF,25V
C24	NEE21CM-105RY	E CAPACITOR	1μF,16V
C25	NCB31EK-103A	CAPACITOR	0.01μF,25V
C26	NCB31EK-103A	CAPACITOR	0.01μF,25V
C27	NCB31EK-103A	CAPACITOR	0.01μF,25V
C30	NCB31HK-102A	CAPACITOR	0.001μF,50V
C201	QCYA1EK-104	CAPACITOR	0.1μF,25V
C202	QCYA1EK-104	CAPACITOR	0.1μF,25V
C203	NCB31CK-333A	CAPACITOR	0.033μF,16V
C204	NCB31CK-333A	CAPACITOR	0.033μF,16V
C205	NCB31HK-562A	CAPACITOR	0.0056μF,50V
C206	QCYA1CK-154	CAPACITOR	0.15μF,16V
C207	NEA70JM-226NZ	E CAPACITOR	22μF,6.3V
C208	NEA70JM-226NZ	E CAPACITOR	22μF,6.3V
C209	NEA71HM-105NZ	E CAPACITOR	1μF,50V
C210	NEA71HM-105NZ	E CAPACITOR	1μF,50V
C212	QCYA1EK-104	CAPACITOR	0.1μF,25V
C213	QCYA1EK-104	CAPACITOR	0.1μF,25V
C214	NEA71CM-106NZ	E CAPACITOR	10μF,16V
C215	NCT06CH-101A	CAPACITOR	100pF,50V
C301	QCF81CZ-225	CAPACITOR	2.2μF,16V
C302	QCF81CZ-225	CAPACITOR	2.2μF,16V
C303	QCF81CZ-225	CAPACITOR	2.2μF,16V
C304	NEA71HM-105NZ	E CAPACITOR	1μF,50V
C305	NCB31HK-681A	CAPACITOR	680pF,50V
C306	NCB31EK-103A	CAPACITOR	0.01μF,25V
C307	NEE21DM-474RY	E CAPACITOR	0.47μF,20V
C308	NCB31HK-331A	CAPACITOR	330pF,50V

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C309	QCYA1EK-104	CAPACITOR	0.1µF,25V
C312	NCB31HK-332A	CAPACITOR	0.0033µF,50V
C313	NCB31CK-473A	CAPACITOR	0.047µF,16V
C314	NCB31EK-103A	CAPACITOR	0.01µF,25V
C315	QCYA1EK-104	CAPACITOR	0.1µF,25V
C316	NEA71CM-106NZ	E CAPACITOR	10µF,16V
C351	QCFA1EZ-224	CAPACITOR	0.22µF,25V
C352	QCFA1EZ-224	CAPACITOR	0.22µF,25V
C353	QCFA1EZ-224	CAPACITOR	0.22µF,25V
C354	NCB31EK-223A	CAPACITOR	0.022µF,25V
C355	NCB31EK-223A	CAPACITOR	0.022µF,25V
C356	NCB31EK-223A	CAPACITOR	0.022µF,25V
C357	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C358	QCYA1CK-124	CAPACITOR	0.12µF,16V
C359	QCYA1CK-124	CAPACITOR	0.12µF,16V
C360	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C362	QCFA1CZ-105	CAPACITOR	1µF,16V
C363	NEE20JM-475RY	E CAPACITOR	4.7µF,6.3V
C401	NCB31HK-331A	CAPACITOR	330pF,50V
C402	YU42058-H476Z	E CAPACITOR	47µF
C404	QCFA1CZ-105	CAPACITOR	1µF,16V
C405	NCB31HK-152A	CAPACITOR	0.0015µF,50V
C407	NCB31HK-152A	CAPACITOR	0.0015µF,50V
C409	NCB31HK-681A	CAPACITOR	680pF,50V
C410	NEE21AM-335RY	E CAPACITOR	3.3µF,10V
C411	NCB31EK-123A	CAPACITOR	0.012µF,25V
C412	NEE20JM-226RY	E CAPACITOR	22µF,6.3V
C414	NEE21CM-105RY	E CAPACITOR	1µF,16V
C415	QCYA1EK-563	CAPACITOR	0.056µF,25V
C417	NCB31HK-332A	CAPACITOR	0.0033µF,50V
C419	NEA70GM-476NZ	E CAPACITOR	47µF,4.0V
C420	NEA70GM-476NZ	E CAPACITOR	47µF,4.0V
C422	NEE20JM-475RY	E CAPACITOR	4.7µF,6.3V
C432	QCFA1CZ-105	CAPACITOR	1µF,16V
C437	NFV41HJ-273AY	F CAPACITOR	0.027µF,50V
C438	NCS31HJ-561A	CAPACITOR	560pF,50V
C439	NCB31HK-822A	CAPACITOR	0.0082µF,50V
C440	YU41970-A226XW	E CAPACITOR	22µF
C441	QCFA1CZ-105	CAPACITOR	1µF,16V
C501	NEA70JM-476NZ	E CAPACITOR	47µF,6.3V
C502	NEA71HM-335NZ	E CAPACITOR	3.3µF,50V
C503	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C504	NEA71HM-225NZ	E CAPACITOR	2.2µF,50V
C505	NEA70GM-476NZ	E CAPACITOR	47µF,4.0V
C506	NCB31CK-104A	CAPACITOR	0.1µF,16V
C507	NCB31HK-332A	CAPACITOR	0.0033µF,50V
C508	NEA71HM-105NZ	E CAPACITOR	1µF,50V
C509	NEE20JM-475RY	E CAPACITOR	4.7µF,6.3V
C510	NEA71HM-105NZ	E CAPACITOR	1µF,50V
C511	NCF31HZ-103A	CAPACITOR	0.01µF,50V
C512	NCT06CH-680A	CAPACITOR	68pF,50V
C513	NCS31HJ-561A	CAPACITOR	560pF,50V
C514	QCSA1HJ-561	CAPACITOR	560pF,50V
C515	NCT06CH-101A	CAPACITOR	100pF,50V
C517	NCT06CH-560A	CAPACITOR	56pF,50V
C518	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C519	NCF31HZ-103A	CAPACITOR	0.01µF,50V
C520	NEA70JM-476NZ	E CAPACITOR	47µF,6.3V
C521	NCF31HZ-103A	CAPACITOR	0.01µF,50V
C523	NCB31EK-153A	CAPACITOR	0.015µF,25V
C524	NCT06CH-221A	CAPACITOR	220pF,50V
C525	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C526	NCT06CH-220A	CAPACITOR	22pF,50V
C528	NCF31HZ-103A	CAPACITOR	0.01µF,50V
C529	NCB31EK-103A	CAPACITOR	0.01µF,25V
C530	NCF31HZ-103A	CAPACITOR	0.01µF,50V
C531	NCF31HZ-103A	CAPACITOR	0.01µF,50V
C532	NCF31HZ-103A	CAPACITOR	0.01µF,50V
C533	NEE20JM-225RY	E CAPACITOR	2.2µF,6.3V
C534	NEE20JM-475RY	E CAPACITOR	4.7µF,6.3V
C535	NCB31EK-103A	CAPACITOR	0.01µF,25V
C536	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C537	NEE21CM-105RY	E CAPACITOR	1µF,16V
C538	NCB31HK-122A	CAPACITOR	0.0012µF,50V
C539	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
C540	NCB31EK-103A	CAPACITOR	0.01µF,25V
C541	YU41415-J106AW	E CAPACITOR	10µF,6.3V
C542	NCB31CK-104A	CAPACITOR	0.1µF,16V
C543	NCB31CK-104A	CAPACITOR	0.1µF,16V
C548	NCT06CH-8R0A	CAPACITOR	8pF,50V
C549	NCT08CH-221A	CAPACITOR	220pF,50V
C561	NCB31HK-102A	CAPACITOR	0.001µF,50V
C562	YU41415-J106AW	E CAPACITOR	10µF,6.3V
C563	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C564	NEE21DM-474RY	E CAPACITOR	0.47µF,20V
C565	NCF31HZ-103A	CAPACITOR	0.01µF,50V
C566	NCF31HZ-103A	CAPACITOR	0.01µF,50V
C567	NCF31HZ-103A	CAPACITOR	0.01µF,50V
C568	NEE21DM-474RY	E CAPACITOR	0.47µF,20V
C569	NEE21DM-474RY	E CAPACITOR	0.47µF,20V
C570	NCF31HZ-103A	CAPACITOR	0.01µF,50V
C571	NCF31HZ-103A	CAPACITOR	0.01µF,50V
C572	NCB31HK-102A	CAPACITOR	0.001µF,50V
C573	NCB31HK-102A	CAPACITOR	0.001µF,50V
C574	NCF31HZ-103A	CAPACITOR	0.01µF,50V
C575	NCT06CH-220A	CAPACITOR	22pF,50V
C576	NCT06CH-5R0A	CAPACITOR	5pF,50V
C577	NCT06CH-121A	CAPACITOR	120pF,50V
C578	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C579	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C602	QCYA1HK-682	CAPACITOR	0.0068µF,50V
C603	NCF31HZ-103A	CAPACITOR	0.01µF,50V
C604	QCYA1EK-683	CAPACITOR	0.068µF,25V
C605	NCT06CH-470A	CAPACITOR	47pF,50V
C607	QCFA1CZ-105	CAPACITOR	1µF,16V
C608	QCFA1CZ-105	CAPACITOR	1µF,16V
C609	QCFA1CZ-105	CAPACITOR	1µF,16V
C610	QCFA1CZ-105	CAPACITOR	1µF,16V
C611	NCB31EK-472A	CAPACITOR	0.0047µF,25V
C612	QCFA1CZ-105	CAPACITOR	1µF,16V
C615	NCB31EK-472A	CAPACITOR	0.0047µF,25V
C616	NCB31EK-472A	CAPACITOR	0.0047µF,25V
C617	QCFA1CZ-105	CAPACITOR	1µF,16V
C618	QCFA1CZ-105	CAPACITOR	1µF,16V
C621	NCB31EK-472A	CAPACITOR	0.0047µF,25V
C622	QCFA1CZ-105	CAPACITOR	1µF,16V
C623	QCFA1CZ-105	CAPACITOR	1µF,16V
C624	QCFA1CZ-105	CAPACITOR	1µF,16V
C625	QCYA1HK-682	CAPACITOR	0.0068µF,50V
C626	NCB31EK-103A	CAPACITOR	0.01µF,25
C627	NCB31EK-103A	CAPACITOR	0.01µF,25
C628	NCT06CH-271A	CAPACITOR	270pF,50
C629	NCB31EK-103A	CAPACITOR	0.01µF,25
C630	NCT06CH-271A	CAPACITOR	270pF,50

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C631	NCB31EK-103A	CAPACITOR	0.01μF,25V
C632	NCT06CH-271A	CAPACITOR	270pF,50V
C633	NCB31EK-103A	CAPACITOR	0.01μF,25V
C634	NCB31EK-103A	CAPACITOR	0.01μF,25V
C635	QCFA1CZ-105	CAPACITOR	1μF,16V
C637	QCFA1CZ-105	CAPACITOR	1μF,16V
C639	QCYA1EK-104	CAPACITOR	0.1μF,25V
C640	QCYA1EK-104	CAPACITOR	0.1μF,25V
C641	NCF31HZ-103A	CAPACITOR	0.01μF,50V
C642	NCF31HZ-103A	CAPACITOR	0.01μF,50V
C643	YU41415-J106AW	E CAPACITOR	10μF,6.3V
C644	NCF31HZ-103A	CAPACITOR	0.01μF,50V
C645	YU41415-J106AW	E CAPACITOR	10μF,6.3V
C646	QCFA1CZ-105	CAPACITOR	1μF,16V
C647	NCT06CH-470A	CAPACITOR	47pF,50V
C649	NCF31HZ-103A	CAPACITOR	0.01μF,50V
C651	NCF31HZ-103A	CAPACITOR	0.01μF,50V
C652	NCB31CK-104A	CAPACITOR	0.1μF,16V
C653	NCF31HZ-103A	CAPACITOR	0.01μF,50V
C654	NCT06CH-271A	CAPACITOR	270pF,50V
C655	NCF31HZ-103A	CAPACITOR	0.01μF,50V
C656	YU41415-J106AW	E CAPACITOR	10μF,6.3V
C657	YU41415-J106AW	E CAPACITOR	10μF,6.3V
C658	NCB31CK-104A	CAPACITOR	0.1μF,16V
C659	YU41415-J106AW	E CAPACITOR	10μF,6.3V
C660	NCF31CZ-224A	CAPACITOR	0.22μF,16V
C701	NEA70JM-476NZ	E CAPACITOR	47μF,6.3V
C702	NCF31HZ-103A	CAPACITOR	0.01μF,50V
C703	NCT06CH-470A	CAPACITOR	47pF,50V
C704	NCT06CH-6R0A	CAPACITOR	6pF,50V
C705	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C706	NCF31HZ-103A	CAPACITOR	0.01μF,50V
C707	NCF31HZ-103A	CAPACITOR	0.01μF,50V
C708	NCT06CH-101A	CAPACITOR	100pF,50V
C709	NCS31HJ-681A	CAPACITOR	680pF,50V
C711	NCF31HZ-103A	CAPACITOR	0.01μF,50V
C712	NCT06CH-221A	CAPACITOR	220pF,50V
C713	NCF31HZ-103A	CAPACITOR	0.01μF,50V
C715	NCF31HZ-103A	CAPACITOR	0.01μF,50V
C716	NCT06CH-270A	CAPACITOR	27pF,50V
C718	NCT06CH-820A	CAPACITOR	82pF,50V
C719	NCT06CH-820A	CAPACITOR	82pF,50V
C720	NCS31HJ-391A	CAPACITOR	390pF,50V
C721	NCS31HJ-471A	CAPACITOR	470pF,50V
C722	NCF31HZ-103A	CAPACITOR	0.01μF,50V
C781	NCT06CH-5R0A	CAPACITOR	5pF,50V
C782	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C783	NCT06CH-181A	CAPACITOR	180pF,50V
C784	NCT06CH-181A	CAPACITOR	180pF,50V
C785	QCTA1CH-271	CAPACITOR	270pF,16V
C786	QCTA1CH-681	CAPACITOR	680pF,16V
C801	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C802	NEA71CM-106NZ	E CAPACITOR	10μF,16V
C803	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C804	NEE21CM-105RY	E CAPACITOR	1μF,16V
C805	NEE21AM-335RY	E CAPACITOR	3.3μF,10V
C806	NEE21AM-335RY	E CAPACITOR	3.3μF,10V
C807	NEE21CM-105RY	E CAPACITOR	1μF,16V
C808	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C809	NCB31EK-103A	CAPACITOR	0.01μF,25V
C810	QCYA1CK-224	CAPACITOR	0.22μF,16V
C811	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C812	NCT06CH-181A	CAPACITOR	180pF,50V
C813	QCYA1CK-224	CAPACITOR	0.22μF,16V
C814	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C815	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C816	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C817	NCB31CK-473A	CAPACITOR	0.047μF,16V
C818	NCB31CK-473A	CAPACITOR	0.047μF,16V
C819	QCYA1HK-103	CAPACITOR	0.01μF,50V
C820	QCYA1HK-103	CAPACITOR	0.01μF,50V
C821	NCB31CK-473A	CAPACITOR	0.047μF,16V
C822	NCB31CK-473A	CAPACITOR	0.047μF,16V
C823	NEA71CM-106NZ	E CAPACITOR	10μF,16V
C824	NCT06CH-220A	CAPACITOR	22pF,50V
C831	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C832	NCB31CK-473A	CAPACITOR	0.047μF,16V
C833	NCB31CK-473A	CAPACITOR	0.047μF,16V
C834	NCB31CK-104A	CAPACITOR	0.1μF,16V
C835	NCB31CK-104A	CAPACITOR	0.1μF,16V
C836	NCB31CK-104A	CAPACITOR	0.1μF,16V
C837	NCB31CK-104A	CAPACITOR	0.1μF,16V
C838	QCFA1CZ-474	CAPACITOR	0.47μF,16V
C839	QCFA1CZ-474	CAPACITOR	0.47μF,16V
C840	NCB31CK-473A	CAPACITOR	0.047μF,16V
C841	NCB31CK-473A	CAPACITOR	0.047μF,16V
C842	NEE21VM-104RY	E CAPACITOR	0.1μF,35V
C843	NEA71CM-106NZ	E CAPACITOR	10μF,16V
C844	NCB31CK-104A	CAPACITOR	0.1μF,16V
C845	NCB31CK-104A	CAPACITOR	0.1μF,16V
C846	NCB31CK-473A	CAPACITOR	0.047μF,16V
C847	NCB31CK-473A	CAPACITOR	0.047μF,16V
C848	NCB31CK-104A	CAPACITOR	0.1μF,16V
C850	QCFA1CZ-105	CAPACITOR	1μF,16V
C851	NCB31CK-104A	CAPACITOR	0.1μF,16V
C852	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C853	NCB31CK-104A	CAPACITOR	0.1μF,16V
C854	NEA71CM-106NZ	E CAPACITOR	10μF,16V
C855	NCT06CH-100A	CAPACITOR	10pF,50V
C856	NCT06CH-270A	CAPACITOR	27pF,50V
C857	NCT06CH-330A	CAPACITOR	33pF,50V
C858	NEA70JM-476NZ	E CAPACITOR	47μF,6.3V
C859	NCT06CH-121A	CAPACITOR	120pF,50V
C901	NCT06CH-470A	CAPACITOR	47pF,50V
C902	NCT06CH-331A	CAPACITOR	330pF,50V
C903	NCB31CK-473A	CAPACITOR	0.047μF,16V
C905	NCB31HK-681A	CAPACITOR	680pF,50V
C906	NCT06CH-221A	CAPACITOR	220pF,50V
C907	NCB31CK-473A	CAPACITOR	0.047μF,16V
C908	NCB31CK-473A	CAPACITOR	0.047μF,16V
C909	NCB31CK-473A	CAPACITOR	0.047μF,16V
C910	NCB31EK-223A	CAPACITOR	0.022μF,25V
C912	NCB31CK-473A	CAPACITOR	0.047μF,16V
C913	NCB31HK-102A	CAPACITOR	0.001μF,50V
C914	YU41970-J106AW	E CAPACITOR	10μF,6.3V
C915	NCB31CK-473A	CAPACITOR	0.047μF,16V
C916	NCT06CH-5R0A	CAPACITOR	5pF,50V
C917	NCB31EK-223A	CAPACITOR	0.022μF,25V
C918	NCB31CK-104A	CAPACITOR	0.1μF,16V
C920	NCB31EK-103A	CAPACITOR	0.01μF,25V
C921	NCT06CH-220A	CAPACITOR	22pF,50V
C922	NCB31CK-473A	CAPACITOR	0.047μF,16V
C923	NCB31EK-103A	CAPACITOR	0.01μF,25V
C924	NCT06CH-151A	CAPACITOR	150pF,50V

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C925	NCB31EK-103A	CAPACITOR	0.01µF,25V
C926	NCT06CH-121A	CAPACITOR	120pF,50V
C927	NCB31EK-103A	CAPACITOR	0.01µF,25V
C928	NCB31CK-273A	CAPACITOR	0.027µF,16V
C929	NCB31CK-273A	CAPACITOR	0.027µF,16V
C930	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C932	NCB31CK-273A	CAPACITOR	0.027µF,16V
C934	NCB31CK-473A	CAPACITOR	0.047µF,16V
C935	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C936	NEA71CM-106NZ	E CAPACITOR	10µF,16V
C937	NCB31EK-153A	CAPACITOR	0.015µF,25V
C938	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C939	YU41970-J106AW	E CAPACITOR	10µF,6.3V
C940	NCB31EK-183A	CAPACITOR	0.018µF,25V
C941	QCYA1EK-183	CAPACITOR	0.018µF,25V
C942	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C943	YU41970-J106AW	E CAPACITOR	10µF,6.3V
C944	NEE21AM-335RY	E CAPACITOR	3.3µF,10V
C945	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C946	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C947	YU41970-J106AW	E CAPACITOR	10µF,6.3V
C948	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C949	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C952	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C953	NEA71CM-106NZ	E CAPACITOR	10µF,16V
C954	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C955	QCYA1CK-224	CAPACITOR	0.22µF,16V
C956	QCYA1CK-473	CAPACITOR	0.047µF,16V
C957	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C958	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C959	NCB31EK-103A	CAPACITOR	0.01µF,25V
C960	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C961	NEA71CM-106NZ	E CAPACITOR	10µF,16V
C962	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C963	NCB31HK-332A	CAPACITOR	0.0033µF,50V
C965	NCB31EK-472A	CAPACITOR	0.0047µF,25V
C966	NCB31EK-472A	CAPACITOR	0.0047µF,25V
C972	NCB31HK-332A	CAPACITOR	0.0033µF,50V
C974	NCB31EK-472A	CAPACITOR	0.0047µF,25V
C975	NCB31EK-472A	CAPACITOR	0.0047µF,25V
C981	YU41415-D226CW	E CAPACITOR	22µF,20V
C982	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C983	NEA70JM-226NZ	E CAPACITOR	22µF,6.3V
C984	NEA71CM-106NZ	E CAPACITOR	10µF,16V
C985	NCF31CZ-104A	CAPACITOR	0.1µF,16V
L1	PU58201-100J	COIL	10µH
L401	PELN0755-P	OSC TRANSFORMER	
L402	YU40740-101K	COIL	100µH
L501	YU41135-220K	COIL	22µH
L503	YU40740-470K	COIL	47µH
L504	YU41134-330JY	COIL	33µH
L507	YU41134-100JY	COIL	10µH
L510	YU40740-100KY	COIL	10µH
L511	YU41134-220J	COIL	22µH
L601	YU40740-470K	COIL	47µH
L603	YU40740-470K	COIL	47µH
L605	YU40740-470K	COIL	47µH
L606	YU40740-470K	COIL	47µH
L701	YU40740-470K	COIL	47µH
L702	YU41134-330JY	COIL	33µH
L703	YU41134-820J	COIL	82µH
L705	YU41134-151JY	COIL	150µH
L707	YU41134-680J	COIL	68µH
L781	YU40740-470K	COIL	47µH
L782	YU41134-1R2MY	COIL	1.2µH
L783	YU41368	CHIP OSC COIL	
L801	YU40740-220K	COIL	22µH
L802	YU40740-220K	COIL	22µH
L805	YU40740-220K	COIL	22µH
L806	YU40740-470K	COIL	47µH
L901	YU41134-181JY	COIL	180µH
L902	YU41134-270JY	COIL	27µH
L903	YU41134-151JY	COIL	150µH
L904	YU41135-220K	COIL	22µH
L905	YU41135-220K	COIL	22µH
L906	YU41135-220K	COIL	22µH
L907	YU41135-220K	COIL	22µH
L908	YU41135-220K	COIL	22µH
L909	YU41134-221JY	COIL	220µH
X1	PEVB0588	CRYSTAL RESONATOR	
X2	YU40141	CRYSTAL RESONATOR	
X501	PEVB0616	CRYSTAL RESONATOR	
X901	PEVB0572-Z	CRYSTAL RESONATOR	
CN1	PEMC0855-014-R	CONNECTOR	
CN2	PEMC0855-020-R	CONNECTOR	
CN3	PEMC0855-018-R	CONNECTOR	
CN4	YU41356-2-P	CONNECTOR	
CN7	PEMC0855-016-R	CONNECTOR	
CN8	PEMC0855-011-R	CONNECTOR	
CN9	PEMC1073-003-P	CONNECTOR	
CN10	PEMC0855-018-R	CONNECTOR	
CN11	PEMC0880-022-R	CONNECTOR	
CN12	PEMC0880-028-X	CONNECTOR	
CN13	PEMC1095-013-R	CONNECTOR	
CN14	PEMC0855-010-R	CONNECTOR	
CN15	PEMC0880-022-R	CONNECTOR	
CN16	PEMC0880-018-R	CONNECTOR	
CN19	PEMC0880-022-R	CONNECTOR	
CN20	PEMC0987-030-R	CONNECTOR	

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REAR BOARD ASSEMBLY <02>

PWBA1	YB20737C1	REAR BOARD ASSY,HF900EG
	YB20737D1	REAR BOARD ASSY,HF700EG
IC1	MB3785APFV	IC
IC2	MM1165GM	IC
Q1	DTA143EU	TRANSISTOR
Q3	2SB1302(ST)	TRANSISTOR
Q4	2SB1302(ST)	TRANSISTOR
Q5	DTC143EU	TRANSISTOR
Q6	MPL1	TRANSISTOR
Q7	2SB1121(TU)	TRANSISTOR
Q9	DTC143EU	TRANSISTOR
Q201	2SB1308(QR)	TRANSISTOR
Q202	DTC124EU	TRANSISTOR
Q203	2SB1302(ST)	TRANSISTOR
Q204	DTC143EU	TRANSISTOR
Q205	2SB1308(QR)	TRANSISTOR
D1	MA736	SB DIODE

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	D2	DWA010	SB DIODE	
	D3	DAN202U	DIODE	
	D101	MA8068	DIODE	
	D103	MA8068	DIODE	
	D104	MA8068	DIODE	
⚠	D201	MA704	DIODE	
	R3	NRVA63D-103N	MF RESISTOR	10kΩ,1/16W
	R4	NRVA63D-103N	MF RESISTOR	10kΩ,1/16W
	R5	NRVA63D-823N	MF RESISTOR	82kΩ,1/16W
	R6	NRVA63D-223N	MF RESISTOR	22kΩ,1/16W
	R7	NRVA63D-682N	MF RESISTOR	6.8kΩ,1/16W
	R8	NRVA63D-512N	MF RESISTOR	5.1kΩ,1/16W
	R9	NRVA63D-103N	MF RESISTOR	10kΩ,1/16W
	R10	NRVA63D-103N	MF RESISTOR	10kΩ,1/16W
	R11	NRSA63J-274N	RESISTOR	270kΩ,1/16W
	R12	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R18	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R19	NRSA63J-471N	RESISTOR	470Ω,1/16W
	R20	NRSA63J-391N	RESISTOR	390Ω,1/16W
	R21	NRSA63J-470N	RESISTOR	47Ω,1/16W
	R22	NRVA63D-303N	MF RESISTOR	30kΩ,1/16W
	R23	NRVA63D-103N	MF RESISTOR	10kΩ,1/16W
	R24	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R25	NRSA63J-471N	RESISTOR	470Ω,1/16W
	R26	NRVA63D-243N	RESISTOR	24kΩ,1/16W
	R27	NRVA63D-332N	MF RESISTOR	3.3kΩ,1/16W
	R28	NRSA63J-682N	RESISTOR	6.8kΩ,1/16W
	R29	NRVA63D-333N	MF RESISTOR	33kΩ,1/16W
	R30	NRVA63D-302N	MF RESISTOR	3kΩ,1/16W
	R31	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R32	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R35	NRSA63J-471N	RESISTOR	470Ω,1/16W
	R37	NRSA63J-223N	RESISTOR	22kΩ,1/16W
	R102	QRSA08J-101YN	RESISTOR	100Ω,1/10W
	R103	QRSA08J-101YN	RESISTOR	100Ω,1/10W
	R104	NRSA63J-682N	RESISTOR	6.8kΩ,1/16W
	R105	NRSA63J-623N	RESISTOR	62kΩ,1/16W
	R106	NRSA63J-152N	RESISTOR	1.5kΩ,1/16W
	R107	NRSA63J-203N	RESISTOR	20kΩ,1/16W
	R108	NRSA63J-152N	RESISTOR	1.5kΩ,1/16W
	R109	NRVA62D-680N	RESISTOR	68Ω,1/16W
	R201	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R202	NRSA63J-681N	RESISTOR	680Ω,1/16W
	R203	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R204	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R205	NRSA63J-561N	RESISTOR	560Ω,1/16W
⚠	R206	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R208	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	C1	QCY81CK-105	CAPACITOR	1μF,16V
	C2	QCY81CK-105	CAPACITOR	1μF,16V
	C3	QCY81CK-105	CAPACITOR	1μF,16V
	C5	QCY81CK-105	CAPACITOR	1μF,16V
	C6	QCY81CK-105	CAPACITOR	1μF,16V
	C7	QCY81CK-105	CAPACITOR	1μF,16V
	C8	QCY81CK-105	CAPACITOR	1μF,16V
	C9	NCS31HJ-561A	CAPACITOR	560pF,50V
	C10	NCB31HK-102A	CAPACITOR	0.001μF,50V
	C11	NCB31HK-472A	CAPACITOR	0.0047μF,50V
	C12	NCB31EK-103A	CAPACITOR	0.01μF,25V
	C13	QCYA1CK-224	CAPACITOR	0.22μF,16V
	C14	NCT06CH-431A	CAPACITOR	430pF,50V
	C15	QCFA1EZ-104	CAPACITOR	0.1μF,25V

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C17	QCYA1EK-104	CAPACITOR	0.1μF,25V
	C18	NCB31EK-103A	CAPACITOR	0.01μF,25V
	C20	NCS31HJ-561A	CAPACITOR	560pF,50V
	C23	NCB31HK-472A	CAPACITOR	0.0047μF,50V
	C24	NCB31EK-103A	CAPACITOR	0.01μF,25V
	C25	NCB31EK-223A	CAPACITOR	0.022μF,25V
	C26	QCY81CK-105	CAPACITOR	1μF,16V
	C27	QCY81CK-105	CAPACITOR	1μF,16V
	C29	QCY81CK-105	CAPACITOR	1μF,16V
	C30	NEH81CM-226NZ	E CAPACITOR	22μF,16V
	C32	QCY81CK-105	CAPACITOR	1μF,16V
	C33	PECA0979	E CAPACITOR	47μF,16V
	C34	NCB31HK-332A	CAPACITOR	0.0033μF,50V
	C35	QCY81CK-105	CAPACITOR	1μF,16V
	C36	QCY81CK-105	CAPACITOR	1μF,16V
	C37	QCY81CK-105	CAPACITOR	1μF,16V
	C39	NCB31EK-103A	CAPACITOR	0.01μF,25V
	C40	NEH81CM-226NZ	E CAPACITOR	22μF,16V
	C41	QCY81CK-105	CAPACITOR	1μF,16V
	C42	QCYA1EK-104	CAPACITOR	0.1μF,25V
	C45	QCY81CK-105	CAPACITOR	1μF,16V
	C46	QCY81CK-105	CAPACITOR	1μF,16V
	C49	NEA70JM-226NZ	T CAPACITOR	22μF,6.3V
	C101	QER40GM-477	E CAPACITOR	470μF,4.0V
	C102	NCS31HJ-101A	CAPACITOR	100pF,50V
	C103	NCS31HJ-101A	CAPACITOR	100pF,50V
	C201	NEA71CM-106NZ	E CAPACITOR	10μF,16V
	C202	QER41AM-227	E CAPACITOR	220μF,10V
	L1	PELN0790-100MP	COIL	10μH
	L2	PELN0790-100MP	COIL	10μH
	L3	PELN0790-390MP	COIL	39μH
	L4	PELN0790-100MP	COIL	10μH
	L5	PELN0790-470MP	COIL	47μH
	L6	PELN0325-150KZ	COIL	15μH
	L7	PELN0325-330KZ	COIL	33μH
	L8	PELN0325-330KZ	COIL	33μH
	L9	YU40740-220K	COIL	22μH
	SW1	PESW0605-02-R	PUSH SWITCH	
	SW2	PESW0675	SLIDE SWITCH	
	SW3	PESW0662	SLIDE SWITCH	
	T1	PELN1045-Z	SW TRANS	
	J1	YQ31845	PIN JACK	
	J2	PEMC1091	MINI JACK	
	KNB1	YQ43087	KNOB(APS)	
	KNB2	YQ43806-2	KNOB(LIGHT)	
⚠	TML1	YQ31792	BATTERY TREMINAL UNIT	
	TML2	YQ31793	BATTERY TERMINAL UNIT	
	CN1	PEMC1018-018-R	CONNECTOR	
	CN2	PEMC1018-022-R	CONNECTOR	
	CN3	PEMC1073-004-R	CONNECTOR	
	CN4	PEMC1073-002-P	CONNECTOR	
	CN5	PEMC1073-005-R	CONNECTOR	
⚠	CP1	ICP-N38	CIRCUIT PROTECTOR	
⚠	CP2	ICP-N38	CIRCUIT PROTECTOR	
⚠	CP3	ICP-N38	CIRCUIT PROTECTOR	
⚠	CP4	ICP-N10	CIRCUIT PROTECTOR	
⚠	CP5	ICP-N10	CIRCUIT PROTECTOR,HF900EG	

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STEREO BOARD ASSEMBLY <04>

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
PWBA	YB20731A-SS	STEREO BOARD ASSY	
IC1	BA7781K	IC	
IC101	JCY0040	IC	
Q3	UMX1N	PAIR TRANSISTOR	
Q4	2SD1328(T)	TRANSISTOR	
Q101	2SC4617(QRS)	TRANSISTOR	
Q102	2SC4617(QRS)	TRANSISTOR	
Q103	DTC143EE	TRANSISTOR	
Q104	UMW1N	PAIR TRANSISTOR	
Q105	2SA1774(QRS)	TRANSISTOR	
Q106	2SA1774(QRS)	TRANSISTOR	
D101	DAN222	DIODE	
D102	DAN222	DIODE	
R1	NRSA63J-821N	RESISTOR	820Ω,1/16W
R2	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R3	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R4	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R5	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R6	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
R10	NRSA63J-822N	RESISTOR	8.2kΩ,1/16W
R12	NRSA63J-153N	RESISTOR	15kΩ,1/16W
R14	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R15	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R16	NRSA63J-104N	RESISTOR	100kΩ,1/16W
R17	NRSA63J-243N	RESISTOR	24kΩ,1/16W
R18	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R23	NRSA63J-822N	RESISTOR	8.2kΩ,1/16W
R24	NRSA63J-153N	RESISTOR	15kΩ,1/16W
R25	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R27	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R28	NRSA63J-104N	RESISTOR	100kΩ,1/16W
R29	NRSA63J-243N	RESISTOR	24kΩ,1/16W
R30	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R31	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R32	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R35	NRSA63J-182N	RESISTOR	1.8kΩ,1/16W
R40	NRSA63J-152N	RESISTOR	1.5kΩ,1/16W
R41	NRSA63J-473N	RESISTOR	47kΩ,1/16W
R42	NRSA63J-393N	RESISTOR	39kΩ,1/16W
R43	NRSA63J-152N	RESISTOR	1.5kΩ,1/16W
R44	NRSA63J-393N	RESISTOR	39kΩ,1/16W
R45	NRSA63J-473N	RESISTOR	47kΩ,1/16W
R46	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
R47	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
R101	NRSA63J-101N	RESISTOR	100Ω,1/16W
R102	NRSA63J-182N	RESISTOR	1.8kΩ,1/16W
R103	NRSA63J-333N	RESISTOR	33kΩ,1/16W
R104	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R105	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R106	NRSA63J-182N	RESISTOR	1.8kΩ,1/16W
R107	NRSA63J-223N	RESISTOR	22kΩ,1/16W
R108	NRVA63D-123N	MF RESISTOR	12kΩ,1/16W
R109	NRSA63J-122N	RESISTOR	1.2kΩ,1/16W
R110	NRSA63J-394N	RESISTOR	390kΩ,1/16W
R111	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R112	NRSA63J-301N	RESISTOR	300Ω,1/16W
R113	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R117	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R118	NRVA63D-153N	MF RESISTOR	15kΩ,1/16W
R120	NRSA63J-511N	RESISTOR	510Ω,1/16W
R121	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R122	NRSA63J-183N	RESISTOR	18kΩ,1/16W
R123	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
R125	NRSA63J-333N	RESISTOR	33kΩ,1/16W
R126	NRSA63J-394N	RESISTOR	390kΩ,1/16W
R127	NRSA63J-511N	RESISTOR	510Ω,1/16W
R128	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R129	NRSA63J-183N	RESISTOR	18kΩ,1/16W
R130	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
R132	NRSA63J-911N	RESISTOR	910Ω,1/16W
R133	NRSA63J-564N	RESISTOR	560kΩ,1/16W
R134	NRSA63J-564N	RESISTOR	560kΩ,1/16W
R135	NRSA63J-911N	RESISTOR	910Ω,1/16W
R136	NRSA63J-332N	RESISTOR	3.3kΩ,1/16W
R137	NRSA63J-104N	RESISTOR	100kΩ,1/16W
R138	NRSA63J-104N	RESISTOR	100kΩ,1/16W
C1	NCB31EK-223A	CAPACITOR	0.022μF,25V
C2	NCB31CK-393A	CAPACITOR	0.039μF,16V
C3	QCYA1EK-153	CAPACITOR	0.015μF,25V
C4	QCYA1EK-104	CAPACITOR	0.1μF,25V
C5	NCB31EK-153A	CAPACITOR	0.015μF,25V
C6	NCB31EK-153A	CAPACITOR	0.015μF,25V
C7	QCYA1EK-104	CAPACITOR	0.1μF,25V
C8	YU41970-J106AW	E CAPACITOR	10μF,6.3V
C10	YU41970-J106AW	E CAPACITOR	10μF,6.3V
C11	QCYA1EK-104	CAPACITOR	0.1μF,25V
C14	NCB31EK-223A	CAPACITOR	0.022μF,25V
C15	QCF81CZ-105	CAPACITOR	1μF,16V
C16	QCYA1EK-104	CAPACITOR	0.1μF,25V
C17	QCYA1EK-104	CAPACITOR	0.1μF,25V
C19	NCB31HK-103A	CAPACITOR	0.01μF,50V
C20	NCB31CK-473A	CAPACITOR	0.047μF,16V
C21	NCB31CK-473A	CAPACITOR	0.047μF,16V
C22	QCYA1EK-104	CAPACITOR	0.1μF,25V
C23	QCYA1EK-104	CAPACITOR	0.1μF,25V
C26	NCB31EK-223A	CAPACITOR	0.022μF,25V
C27	QCF81CZ-105	CAPACITOR	1μF,16V
C28	QCYA1EK-104	CAPACITOR	0.1μF,25V
C29	QCYA1EK-104	CAPACITOR	0.1μF,25V
C31	NCB31HK-103A	CAPACITOR	0.01μF,50V
C32	NCB31CK-473A	CAPACITOR	0.047μF,16V
C33	NCB31CK-473A	CAPACITOR	0.047μF,16V
C34	QCYA1EK-104	CAPACITOR	0.1μF,25V
C35	QCYA1EK-104	CAPACITOR	0.1μF,25V
C36	NEA70JM-226NZ	E CAPACITOR	22μF,6.3V
C37	NCB31HK-103A	CAPACITOR	0.01μF,50V
C38	NCB31HK-332A	CAPACITOR	0.0033μF,50V
C39	NCB31HK-332A	CAPACITOR	0.0033μF,50V
C40	YU42058-H476Z	E CAPACITOR	47μ
C41	QCF81CZ-105	CAPACITOR	1μF,16V
C44	QCF81CZ-105	CAPACITOR	1μF,16V
C103	YU42058-H476Z	E CAPACITOR	47μ
C105	NEA71CM-106NZ	E CAPACITOR	10μF,16V
C106	NCB31HK-103A	CAPACITOR	0.01μF,50V
C107	NCB31HK-103A	CAPACITOR	0.01μF,50V
C108	NCB31HK-103A	CAPACITOR	0.01μF,50V
C109	QCYA1CK-224	CAPACITOR	0.22μF,16V
C110	NCS31HJ-271A	CAPACITOR	270pF,50V
C112	NCB31HK-103A	CAPACITOR	0.01μF,50V

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C114	YU42058-H476Z	E CAPACITOR	47μF
	C115	NCB31HK-103A	CAPACITOR	0.01μF,50V
	C117	NCB31CK-473A	CAPACITOR	0.047μF,16V
	C118	YU42058-A336Z	E CAPACITOR	0.0A3μF
	C120	YU41970-J106AW	E CAPACITOR	10μF,6.3V
	C121	NEA70GM-476NZ	E CAPACITOR	47μF,4.0V
	C122	NCB31HK-103A	CAPACITOR	0.01μF,50V
	C123	NCB31HK-103A	CAPACITOR	0.01μF,50V
	C124	NCB31HK-103A	CAPACITOR	0.01μF,50V
	C126	YU42058-H476Z	E CAPACITOR	47μF
	C128	YU41970-J106AW	E CAPACITOR	10μF,6.3V
	C129	YU41970-J106AW	E CAPACITOR	10μF,6.3V
	C130	YU42058-A336Z	E CAPACITOR	33μF
	C131	NCB31CK-473A	CAPACITOR	0.047μF,16V
	C133	YU41970-J106AW	E CAPACITOR	10μF,6.3V
	C134	NEA70GM-476NZ	E CAPACITOR	47μF,4.0V
	C135	NCB31HK-103A	CAPACITOR	0.01μF,50V
	C136	NEA70GM-476NZ	E CAPACITOR	47μF,4.0V
	C137	NCB31HK-103A	CAPACITOR	0.01μF,50V
	C138	NCB31HK-103A	CAPACITOR	0.01μF,50V
	C141	QCF81CZ-105	CAPACITOR	1μF,16V
	C142	NEA71EM-475NZ	E CAPACITOR	4.7μF,25V
	C143	NEA71EM-475NZ	E CAPACITOR	4.7μF,25V
	C144	YU42058-H476Z	E CAPACITOR	47μF
	C147	QCF81CZ-105	CAPACITOR	1μF,16V
	L102	YU40740-470K	COIL	47μH
	L104	YU40740-470K	COIL	47μH
	L105	YU40740-470K	COIL	47μH
	J1	PEMC1062	MIC JACK	
	CN1	PEMC1018-022-R	CONNECTOR	
	CN2	YU41356-3-P	CONNECTOR	

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SENSOR BOARD ASSEMBLY <05>

PWBA	YU42052-1-3	SENSOR BOARD ASSY	

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CCD BOARD ASSEMBLY <06>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PWBA	YB20721E-SS	CCD BOARD ASSY	
	IC201	MN3112SA	IC	
	IC202	JCY0035	IC	
	IC203	AN2018S	IC	
	Q201	2SC4081(QR)	TRANSISTOR	
	Q202	XP5501	TRANSISTOR	
	Q203	2SC3931(CD)	TRANSISTOR	
	Q204	2SC4081(QR)	TRANSISTOR	
	Q205	2SC4081(QR)	TRANSISTOR	
	D201	1SS355	DIODE	
	D202	1SS355	DIODE	
	D203	MA143	DIODE	
	D204	1SS355	DIODE	
	R201	NRSA63J-153N	RESISTOR	15kΩ,1/16W
	R202	NRSA63J-393N	RESISTOR	39kΩ,1/16W
	R203	NRSA63J-203N	RESISTOR	20kΩ,1/16W
	R204	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
	R205	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R206	NRSA63J-153N	RESISTOR	15kΩ,1/16W
	R207	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R208	NRSA63J-432N	RESISTOR	4.3kΩ,1/16W
	R209	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R210	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R211	NRSA63J-273N	RESISTOR	27kΩ,1/16W
	R212	NRSA63J-332N	RESISTOR	3.3kΩ,1/16W
	R213	NRSA63J-105N	RESISTOR	1MΩ,1/16W
	R214	NRSA63J-100N	RESISTOR	10Ω,1/16W
	R215	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
	R216	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
	R217	NRSA63J-101N	RESISTOR	100Ω,1/16W
	R218	NRSA63J-560N	RESISTOR	56Ω,1/16W
	R219	NRSA63J-560N	RESISTOR	56Ω,1/16W
	R220	NRSA63J-101N	RESISTOR	100Ω,1/16W
	R221	NRSA63J-393N	RESISTOR	39kΩ,1/16W
	R222	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R226	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R228	NRSA63J-332N	RESISTOR	3.3kΩ,1/16W
	R229	NRSA63J-152N	RESISTOR	1.5kΩ,1/16W
	R230	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R231	NRSA63J-101N	RESISTOR	100Ω,1/16W
	R232	NRSA63J-220N	RESISTOR	22Ω,1/16W
	R233	NRSA63J-220N	RESISTOR	22Ω,1/16W
	R234	NRSA63J-101N	RESISTOR	100Ω,1/16W
	R235	NRSA63J-101N	RESISTOR	100Ω,1/16W
	R238	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	C201	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C202	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C203	NCB31EK-103A	CAPACITOR	0.01μF,25V
	C204	QCFA1CZ-105	CAPACITOR	1μF,16V
	C205	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C206	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C207	NEA71CM-106NZ	E CAPACITOR	10μF,16V
	C208	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C209	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C210	NEA70JM-226NZ	E CAPACITOR	22μF,6.3V
	C211	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C212	NEA71EM-475NZ	E CAPACITOR	4.7μF,25V
	C213	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C214	NEA71EM-475NZ	E CAPACITOR	4.7μF,25V
	C215	QCYA1EK-104	CAPACITOR	0.1μF,25V
	C216	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C217	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C218	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C219	NEE21CM-105RY	E CAPACITOR	1μF,16V
	C220	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C221	NEA70JM-226NZ	E CAPACITOR	22μF,6.3V
	C223	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C224	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C225	NCT06CH-470A	CAPACITOR	47pF,50V
	C226	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C227	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C228	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C229	NCT06CH-560A	CAPACITOR	56pF,50V
	C230	NCT06CH-101A	CAPACITOR	100pF,50V
	C231	NEA70JM-107NP	E CAPACITOR	100μF,6.3V
	L201	YU40740-220K	COIL	22μH

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	L202	YU40740-220K	COIL	22μH
	L203	YU40740-220K	COIL	22μH
	L204	YU40740-220K	COIL	22μH
	L205	YU40740-220K	COIL	22μH
	L206	YU41607-Y	FERR.BEADS	
	L207	YU41607-Y	FERR.BEADS	
	L208	YU41607-Y	FERR.BEADS	
	X201	PEVB0504-P	CXO	
	CN201	PEMC1071	CCD SOCKET	
	CN202	PEMC0880-028-X	CONNECTOR	
	CN203	YU41356-4-R	CONNECTOR	

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APS BOARD ASSEMBLY <07>

PWBA2	YB20737A2	APS BOARD ASSY
PS1	PESC1163	PH INTERRUPTER
ML1	ML-Y00719A	WIRE

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IR BOARD ASSEMBLY <08>

PWBA	YQ31871-1-1	IR BOARD ASSY

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OPERATION(CAMERA)BOARD ASSEMBLY <09>

PWBA	YQ20803-3-3	OPERATION(CAMERA)BOARD ASSY

****

UPPER DRUM BOARD <40>

PWB	YDM3068-6	BOARD (UPPER DRUM)

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E.VF BOARD ASSEMBLY(GR-HF700EG) <50>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PWBA	YQ31803-600	E.VF BOARD ASSY	
	IC1	BA7149F	IC	
	Q1	2SA1037K	TRANSISTOR,TR1	
		or 2SA1179	TRANSISTOR,TR1	
		or 2SA1235	TRANSISTOR,TR1	
	Q2	2SC4132	TRANSISTOR,TR2	
	Q3	2SC4618	TRANSISTOR,TR3	
		or 2SC4655	TRANSISTOR,TR3	
	D1	RLS245	DIODE	
	R1	YQ31803-501	RESISTOR	9.1kΩ,1/10W
	R2	QRSA08G-333YN	RESISTOR	33kΩ,1/10W
	R3	QRSA08J-3R9YN	RESISTOR	3.9Ω,1/10W
	R4	QRSA08J-390YN	RESISTOR	39Ω,1/10W
	R5	YU30595-111	RESISTOR	390Ω,1/10W
	R6	YU30595-113	RESISTOR	91kΩ,1/10V
	R7	QRSA08J-103YN	RESISTOR	10kΩ,1/10V
	R8	YQ31803-502	RESISTOR	2.2kΩ,1/10V
	R9	QRSA08J-102YN	RESISTOR	1kΩ,1/10V
	VR1	YQ31803-504	V RESISTOR,V SIZE	470Ω
	VR2	YQ31803-505	V RESISTOR,H HOLD	47k
	VR4	YQ31803-506	V RESISTOR,BRIGHT	1M
	R10	QRSA08J-102YN	RESISTOR	1kΩ,1/10V
	R11	QRSA08J-330YN	RESISTOR	33Ω,1/10V
	R12	QRSA08J-113YN	RESISTOR	11kΩ,1/10V
	R13	YQ31803-503	RESISTOR	3.9kΩ,1/10V
	R14	QRSA08J-822YN	RESISTOR	8.2kΩ,1/10V
	R15	QRSA08J-182YN	RESISTOR	1.8kΩ,1/10V
	R16	QRSA08J-332YN	RESISTOR	3.3kΩ,1/10V
	R17	QRSA08J-102YN	RESISTOR	1kΩ,1/10V
	R18	QRSA08J-471YN	RESISTOR	470Ω,1/10V
	R19	QRSA08F-103YN	RESISTOR	10kΩ,1/10V
	R20	QRSA08F-152YN	RESISTOR	1.5kΩ,1/10V
	R21	QRSA08J-275YN	RESISTOR	2.7MΩ,1/10V
	R22	QRSA08J-275YN	RESISTOR	2.7MΩ,1/10V
	R23	QRSA08J-105YN	RESISTOR	1MΩ,1/10V
	R24	QRSA08J-154YN	RESISTOR	150kΩ,1/10V
	R25	QRSA08J-2R7YN	RESISTOR	2.7Ω,1/10V
	R26	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10V
	R27	QRSA08J-102YN	RESISTOR	1kΩ,1/10V
	C1	YQ31803-507	CAPACITOR	0.22μF,16
	C2	YQ31304-503	CAPACITOR	1μF,16
	C3	YQ31304-504	CAPACITOR	1500pF,50
	C4	YQ31304-503	CAPACITOR	1μF,16
	C5	YQ31304-506	E CAPACITOR	100μF,10
	C6	YQ31304-506	E CAPACITOR	100μF,10
	C7	YQ31304-506	E CAPACITOR	100μF,10
	C8	YQ31304-503	CAPACITOR	1μF,16
	C9	YQ31392-501	CAPACITOR	100pF,16
	C10	YU30531-163	CAPACITOR	0.047μ
	C11	QER61HM-100	E CAPACITOR	10pF,50
	C12	YQ31803-508	F CAPACITOR	6200pF,100
	C13	YQ31304-506	E CAPACITOR	100μF,10
	C14	YQ31304-507	CAPACITOR	1500pF,630
	L1	YQ30723-115	COIL	100μ
	TH1	YU30236-110	THERMISTOR	
	WR1	YQ31803-580	FPC	
⚠	FBT1	YQ31803-550	FLY BACK TRANS	
	HLC1	YQ31803-560	H.COIL	
	CN1	YQ31803-570	CONNECTOR	
	CN2	YQ31803-571	CONNECTOR	
	CN3	YQ31803-572	CONNECTOR	

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PBL BOARD ASSEMBLY(GR-HF900EG) <51>

PWBA1	YB20727B1-02	PBL BOARD ASSY
IC101	TC7W04FU	IC
IC102	TA75S01F	IC
IC103	FA7615M-XE	IC
Q101	2SC3646(ST)	TRANSISTOR
Q102	2SK1254S	TRANSISTOR
Q103	XN6534	PAIR TRANSISTOR

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
Q104	XN6534	PAIR TRANSISTOR	
D101	MA110	DIODE	
D103	SB07-03C-X	SB DIODE	
D104	MA110	DIODE	
R101	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R102	NRSA63J-105N	RESISTOR	1MΩ,1/16W
R103	NRVA63D-123N	MF RESISTOR	12kΩ,1/16W
R104	NRSA63J-274N	RESISTOR	270kΩ,1/16W
R106	NRVA63D-202N	RESISTOR	2kΩ,1/16W
R107	NRVA63D-563N	MF RESISTOR	56kΩ,1/16W
R108	NRVA63D-133N	MF RESISTOR	13kΩ,1/16W
R109	NRVA63D-563N	MF RESISTOR	56kΩ,1/16W
R111	NRSA63J-274N	RESISTOR	270kΩ,1/16W
R112	NRSA63J-104N	RESISTOR	100kΩ,1/16W
R113	NRVA63D-223N	MF RESISTOR	22kΩ,1/16W
R115	NRVA63D-223N	MF RESISTOR	22kΩ,1/16W
R116	NRVA63D-223N	MF RESISTOR	22kΩ,1/16W
R117	NRVA63D-472N	MF RESISTOR	4.7kΩ,1/16W
R118	NRSA63J-682N	RESISTOR	6.8kΩ,1/16W
R120	NRSA63J-681N	RESISTOR	680Ω,1/16W
R121	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R123	NRSA63J-683N	RESISTOR	68kΩ,1/16W
R124	NVP1202-102N	V RESISTOR,REG 13.5V	
R125	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R126	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R127	NRSA63J-333N	RESISTOR	33kΩ,1/16W
R128	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R129	NRSA63J-104N	RESISTOR	100kΩ,1/16W
R130	NRSA63J-273N	RESISTOR	27kΩ,1/16W
R131	NRVA63D-151N	MF RESISTOR	150Ω,1/16W
R135	NRSA63J-623N	RESISTOR	62kΩ,1/16W
R136	NVP1202-223N	V RESISTOR,BRIGHT	
R137	NRSA63J-473N	RESISTOR	47kΩ,1/16W
R138	NRSA63J-393N	RESISTOR	39kΩ,1/16W
R139	NVP1202-223N	V RESISTOR,COLOR LEVEL	
R140	NRSA63J-563N	RESISTOR	56kΩ,1/16W
R141	NRSA63J-184N	RESISTOR	180kΩ,1/16W
R144	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
R145	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
R146	NRSA63J-821N	RESISTOR	820Ω,1/16W
R147	NRSA63J-821N	RESISTOR	820Ω,1/16W
R148	NRSA63J-101N	RESISTOR	100Ω,1/16W
R150	NRSA63J-101N	RESISTOR	100Ω,1/16W
C101	NCB31EK-103A	CAPACITOR	0.01μF,25V
C102	QCFA1CZ-105	CAPACITOR	1μF,16V
C103	NCB31EK-103A	CAPACITOR	0.01μF,25V
C104	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C105	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C106	QCTA2CH-122	CAPACITOR	0.0012μF,160V
C107	YU41970-G476XW	E CAPACITOR	47μF
C108	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C109	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C110	NEE21AM-476RZ	E CAPACITOR	47μF,10V
C111	QCFA1CZ-225	CAPACITOR	2.2μF,16V
C112	NCB31EK-223A	CAPACITOR	0.022μF,25V
C113	NCT07CH-330A	CAPACITOR	33pF,50V
C114	NEE21DM-226RZ	E CAPACITOR	22μF,20V
C115	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C116	NEE21CM-336RZ	E CAPACITOR	33μF,16V
C117	QCFA1CZ-225	CAPACITOR	2.2μF,16V
C120	NEE20JM-225RY	E CAPACITOR	2.2μF,6.3V
C121	YU41970-A106AW	E CAPACITOR	10μF
C122	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C123	NCB31HK-102A	CAPACITOR	0.001μF,50V
C124	NCB31HK-102A	CAPACITOR	0.001μF,50V
C125	NCT07CH-560A	CAPACITOR	56pF,50V
C126	NCT07CH-560A	CAPACITOR	56pF,50V
L101	YU41135-220K	COIL	22μH
L102	PELN0999-681MP	COIL	680μH
L103	YU41135-220K	COIL	22μH
T101	PELN1069-R	SW TRANS	
CN101	PEMC0855-010-R	CONNECTOR	
CN102	PEMC0967-012-P	CONNECTOR	
CN103	PEMC0907-010-P	CONNECTOR	

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CLD BOARD ASSEMBLY(GR-HF900EG) <52>

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
PWBA2	YB20727B2-02	CLD BOARD ASSY	
IC201	CXA1785AR	IC	
IC202	CXD2403AR	IC	
Q201	XP2501	TRANSISTOR	
D201	MA365	DIODE	
R201	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R202	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R219	NRVA63D-273N	MF RESISTOR	27kΩ,1/16W
R220	NRVA63D-243N	RESISTOR	24kΩ,1/16W
R222	NRVA63D-223N	MF RESISTOR	22kΩ,1/16W
R223	NRVA63D-273N	MF RESISTOR	27kΩ,1/16W
R224	NRSA63J-393N	RESISTOR	39kΩ,1/16W
R225	NVP1202-223N	V RESISTOR,SUB BRT R	
R226	NRSA63J-393N	RESISTOR	39kΩ,1/16W
R227	NRSA63J-393N	RESISTOR	39kΩ,1/16W
R228	NVP1202-223N	V RESISTOR,SUB BRT B	
R229	NRSA63J-393N	RESISTOR	39kΩ,1/16W
R235	NRSA63J-752N	RESISTOR	7.5kΩ,1/16W
R236	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R245	NRSA63J-101N	RESISTOR	100Ω,1/16W
R248	NRSA63J-393N	RESISTOR	39kΩ,1/16W
R249	NVP1202-223N	V RESISTOR,CONTRAST	
R250	NRSA63J-393N	RESISTOR	39kΩ,1/16W
R251	NRVA63D-183N	MF RESISTOR	18kΩ,1/16W
R252	NRSA63J-564N	RESISTOR	560kΩ,1/16W
R253	NRSA63J-473N	RESISTOR	47kΩ,1/16W
R254	NRSA63J-563N	RESISTOR	56kΩ,1/16W
R255	NRSA63J-271N	RESISTOR	270Ω,1/16W
R256	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R257	NRVA63D-472N	MF RESISTOR	4.7kΩ,1/16W
R258	NRVA63D-472N	MF RESISTOR	4.7kΩ,1/16W
R259	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
R260	NRSA63J-474N	RESISTOR	470kΩ,1/16W
R261	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R262	NRSA63J-333N	RESISTOR	33kΩ,1/16W
R263	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R264	NRSA63J-333N	RESISTOR	33kΩ,1/16W
R265	NVP1202-223N	V RESISTOR,PLL	
R266	NRSA63J-273N	RESISTOR	27kΩ,1/16W
R267	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R268	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R270	NRVA63D-122N	MF RESISTOR	1.2kΩ,1/16W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R271	NRVA63D-183N	MF RESISTOR	18kΩ,1/16W
R274	NRVA63D-563N	MF RESISTOR	56kΩ,1/16W
R275	NRVA63D-363N	MF RESISTOR	36kΩ,1/16W
C201	NEE21AM-225RY	E CAPACITOR	2.2µF,10V
C202	YU41970-J106AW	E CAPACITOR	10µF,6.3V
C207	NCB31EK-103A	CAPACITOR	0.01µF,25V
C208	NCB31EK-103A	CAPACITOR	0.01µF,25V
C214	QCFA1CZ-105	CAPACITOR	1µF,16V
C215	QCFA1CZ-105	CAPACITOR	1µF,16V
C216	QCFA1CZ-105	CAPACITOR	1µF,16V
C217	NEE21CM-225RY	E CAPACITOR	2.2µF,16V
C218	NCB31EK-103A	CAPACITOR	0.01µF,25V
C219	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C220	NCB31EK-103A	CAPACITOR	0.01µF,25V
C221	NCB31EK-103A	CAPACITOR	0.01µF,25V
C222	NCB31EK-103A	CAPACITOR	0.01µF,25V
C223	NCB31EK-103A	CAPACITOR	0.01µF,25V
C224	NCB31EK-103A	CAPACITOR	0.01µF,25V
C225	NCB31EK-103A	CAPACITOR	0.01µF,25V
C226	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C227	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C228	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C229	NCB31EK-103A	CAPACITOR	0.01µF,25V
C230	NCB31HK-682A	CAPACITOR	0.0068µF,50V
C231	NEE21AM-225RY	E CAPACITOR	2.2µF,10V
C232	NCB31EK-103A	CAPACITOR	0.01µF,25V
C233	QCFA1CZ-105	CAPACITOR	1µF,16V
C234	NEE21AM-225RY	E CAPACITOR	2.2µF,10V
C235	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C237	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C238	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C239	QCF81CZ-225	CAPACITOR	2.2µF,16V
C240	NCB31HK-332A	CAPACITOR	0.0033µF,50V
C241	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C242	NCT07CH-101A	CAPACITOR	100pF,50V
C243	NCB31HK-102A	CAPACITOR	0.001µF,50V
C244	NCB31EK-103A	CAPACITOR	0.01µF,25V
C245	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C246	NEE21CM-225RY	E CAPACITOR	2.2µF,16V
C247	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C249	NCF31CZ-104A	CAPACITOR	0.1µF,16V
L201	PELN0584-100JY	COIL	10µH
L203	PELN0584-100JY	COIL	10µH
L204	PELN0584-100JY	COIL	10µH
L205	PELN0865-6R8KY	COIL	6.8µH
CN201	YU41358-12-R	CONNECTOR	
CN202	PEMC0880-016-R	CONNECTOR	

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BL BOARD ASSEMBLY(GR-HF900EG) <53>

PWBA3	YB20727B3-02	BL BOARD ASSY
BL301	PEDP0176	LAMP
CN301	YU41359-10-P	CONNECTOR

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
R271	NRVA63D-183N	MF RESISTOR	18kΩ,1/16W
R274	NRVA63D-563N	MF RESISTOR	56kΩ,1/16W
R275	NRVA63D-363N	MF RESISTOR	36kΩ,1/16W
C201	NEE21AM-225RY	E CAPACITOR	2.2μF,10V
C202	YU41970-J106AW	E CAPACITOR	10μF,6.3V
C207	NCB31EK-103A	CAPACITOR	0.01μF,25V
C208	NCB31EK-103A	CAPACITOR	0.01μF,25V
C214	QCFA1CZ-105	CAPACITOR	1μF,16V
C215	QCFA1CZ-105	CAPACITOR	1μF,16V
C216	QCFA1CZ-105	CAPACITOR	1μF,16V
C217	NEE21CM-225RY	E CAPACITOR	2.2μF,16V
C218	NCB31EK-103A	CAPACITOR	0.01μF,25V
C219	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C220	NCB31EK-103A	CAPACITOR	0.01μF,25V
C221	NCB31EK-103A	CAPACITOR	0.01μF,25V
C222	NCB31EK-103A	CAPACITOR	0.01μF,25V
C223	NCB31EK-103A	CAPACITOR	0.01μF,25V
C224	NCB31EK-103A	CAPACITOR	0.01μF,25V
C225	NCB31EK-103A	CAPACITOR	0.01μF,25V
C226	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C227	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C228	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C229	NCB31EK-103A	CAPACITOR	0.01μF,25V
C230	NCB31HK-682A	CAPACITOR	0.0068μF,50V
C231	NEE21AM-225RY	E CAPACITOR	2.2μF,10V
C232	NCB31EK-103A	CAPACITOR	0.01μF,25V
C233	QCFA1CZ-105	CAPACITOR	1μF,16V
C234	NEE21AM-225RY	E CAPACITOR	2.2μF,10V
C235	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C237	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C238	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C239	QCF81CZ-225	CAPACITOR	2.2μF,16V
C240	NCB31HK-332A	CAPACITOR	0.0033μF,50V
C241	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C242	NCT07CH-101A	CAPACITOR	100pF,50V
C243	NCB31HK-102A	CAPACITOR	0.001μF,50V
C244	NCB31EK-103A	CAPACITOR	0.01μF,25V
C245	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C246	NEE21CM-225RY	E CAPACITOR	2.2μF,16V
C247	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C249	NCF31CZ-104A	CAPACITOR	0.1μF,16V
L201	PELN0584-100JY	COIL	10μH
L203	PELN0584-100JY	COIL	10μH
L204	PELN0584-100JY	COIL	10μH
L205	PELN0865-6R8KY	COIL	6.8μH
CN201	YU41358-12-R	CONNECTOR	
CN202	PEMC0880-016-R	CONNECTOR	

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BL BOARD ASSEMBLY(GR-HF900EG) <53>

PWBA3	YB20727B3-02	BL BOARD ASSY
BL301	PEDP0176	LAMP
CN301	YU41359-10-P	CONNECTOR

SECTION 6
TECHNICAL INFORMATION

6.1 EMERGENCY DISPLAY

Whenever some abnormal signal is supplied to mechacon CPU, an error number (E 04, for example) displayed on the electronic view finder.

E. VF DISPLAY	Symptom	Mode when observed	Resulting mode
E 06	CAPSTAN FG input absent	EDIT	STOP
E 04	DRUM FF input absent	DRUM rotation	STOP
E 03	SUPPLY REEL FG input absent	REC, PLAY, SEARCH, FF	STOP
E 02	Mode control motor rotates for more than 10 sec, without shift to next mode.	UNLOADING	Mode continues
E 01	Mode control motor rotates for more than 10 sec, without shift to next mode.	LOADING	Mode continues

Emergency mode : Indication for 5 minutes, then power OFF
Port states : Same as Stop mode
Effective key : POWER
Shifted mode : Power OFF